

G C Halliday

Return to Room 234.

GC Halliday

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Main Lawn, Central Experimental Farm, showing perennial border (vide "Popular Flowers of the Future").

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EDITORIAL

Once more it is our pleasure to chronicle the opening of another College year. Our familiar halls have again resounded with the hum and bustle of assembling students. From all parts of the world do these men and women come to take from Alma Mater the gifts she offers and to add their quota to what she stands for.

Many for the first time, as units in the much abused though necessary

Freshman class, meander through the halls with feelings of curiosity, amazement and loneliness. Many, just one year removed from the freshman ranks, are, as of old, endeavouring to steer their more unlearned brethren through the paths of righteousness and well-doing; while here and there we see Junior and Senior with a friendliness and dignity that behoves his station in life.

Though from different parts of the world and therefore actuated by motives and ideas which must differ even as the individuals, the question must some day assert itself: "How am I to get the best out of my College life so that I may be equipped in some measure for future work?" To be successful and to be of some use in the world, we cannot avoid the important question. If it is evaded, time after time it must crop up again. Some of us put off answering this question until very late, and then it is we realize that lost time cannot be made up. At College, quite often we get so caught up in the swirl of youthful proclivities that all ideals of an after-college life seem to vanish and we are left with what can only be the apparition of such ideals, namely, the passing of exams. In a week, perhaps, some of us may be able to cram up enough of the ingredients of books and notes necessary to get through exams, but then if this is a measure of our work at College, we are deceiving ourselves. Sooner or later we must be confronted with—"What can I do, and how can I apply my training at College?" We shall not then be given an opportunity of cramming up a few facts and putting them on paper.

Would it not be advisable, therefore, for us, and especially students just entering, to set before ourselves some ideal of an after-college life? Make the best of our opportunities here and so sharpen our intellects that we may be able to gather and hold on to the smallest fact which may help us to attain our goal.

* * *

The magazine extends a cordial welcome to the new students and wishes one and all a successful College year.

* * *

In accordance with the usual custom, we have with this number the changes

which are necessary to be made among the girl members of the Editorial Board.

A meeting of the student body was held on October 5 and the various offices were filled. It will be noticed also that owing to a couple of the men on the staff not having returned this year, their places were filled by new members. With the next issue the men holding office at present will have completed their labours and will retire.

We have been fortunate in obtaining an office in the Men's Residence this year, and this will facilitate work considerably. The Board had hoped to obtain an office in the Main Building, which would have been more central and within easy reach of both men and women on the staff, but the authorities did not see their way to grant us this request. However, we are thankful for small mercies, and having the office in the Men's Residence makes it very convenient for those who have to do most of the work. Anyone who has had anything to do with the magazine in the past will remember where the old office was in the Chemistry-Physics Building. It was always a source of annoyance to have to go such a long way from the residence after some small matter which might require attention. The present arrangement not only saves time and is easier for the busiest members of the staff, but in addition we have a suitable place for the distribution of copies.

Prospects are in evidence of another successful year for the magazine and we hope that many new subscriptions will come in before we go to press.

* * *

In our last issue we referred to the fact that a demonstration train was to be run through the Province of Quebec during the Summer under the auspices of the College. We are glad to say

that this train was a great success and from every quarter reports came of the good work that was being done. The instructors and others who accompanied the train report interesting experiences and the attendance was large at practically every stop made. Professor Lochhead was in charge for the greater part of the time. Much has already been written about the train and we do not intend writing further, we merely mention it in connection with what follows.

To supplement this mode of taking agricultural education to the farmer and giving it to him on his own domains, the authorities have decided to hold winter short courses this year, not at the College, as in previous years, but at various centres throughout the Province. This idea has many commendable features, and we hope that a large number of farmers and their sons will take advantage of this great opportunity. It is well known and we admit that it is not possible for every young farmer in this Province to take a Two-year Course at the College, and for those who cannot take a longer one the Short Course was instituted. Surely with the facilities

offered, there is going to be a live interest taken in the movement and an attempt made by every practical farmer to get in touch with the gospel of better farming. The facts will be boiled down and put in a form which can easily be assimilated. We hope, therefore, that good results will follow after all the trouble that is being taken to put on the courses.

This year several changes and additions have been made to the College Staff, as will be gathered from the Faculty Items, and the College is in a position to undertake and thoroughly carry through work of this nature. The Extension Department of the College has been enlarged and several men have been drawn from the ranks of Class '12 to fill the role of District Representatives. These men will no doubt take a prominent part in the work of the coming Short Courses. The counties in which district representative work is being carried out in the Province of Quebec are Huntingdon, Chateauguay, Beauharnois, Pontiac, Rouville, Sherbrooke, and adjacent counties; also Missisquoi and adjacent counties.

Popular Flowers of the Future.

By F. E. BUCK, B.S.A., Central Experimental Farm



Is there such a thing as "The Most Popular Flower" or, in other words, a flower which has won the greatest amount of favour from all classes of people? No, there is no such flower! If there were such a flower it might be far more difficult to speculate as to "the types of flowers which are likely to be popular in the future."

Interesting as such a speculation is from a scientific standpoint, there is no doubt but that it is of much more interest from the commercial standpoint. Flowers in many sections of some countries, and in one or two in particular, practically account for the entire income of the whole population of very large districts. Holland supplies to England alone, every year, bulbs to the value of over \$5,000,000. One eminent authority has stated that in Europe whereas "An acre of wheat or potatoes may be put down as worth from \$50 to \$150 according to the locality and variety, an acre of choice daffodils or narcissi may be worth anything from \$250 to \$250,000." Figures showing the immense volume of business done by the florists of all civilized countries are almost incredible. Last spring one European firm shipped cut flowers for several weeks at the rate of over 150,000 blooms daily. In Canada the trade is likewise developing rapidly. One well-known firm every week in the year ships for home consumption over 52,000 spikes of lily of the valley, and other flowers are shipped in like proportion. And when "American Beauty" Roses will command the price of \$25 per dozen during Christmas week it is readily

seen that the production of one or more flowers, which in the future would become as popular as are some of the present day favourites, would be something worth while from several standpoints.

Popular flowers of the future may be our present day flowers greatly improved and otherwise modified, or they may be new creations of the hybridist's art. But more interesting to many is the fact that any fairly good flower may become popular in the near future. The reasons for this would be that the somewhat fickle general public is constantly doing two things, namely finding new uses for all things under the sun and discarding old friends for new. Now, there are at least six (and perhaps twice that number) flowers which to-day are very popular. Some of them could be named by any school child in the land, while at least one of them would not be recognized by more than five per cent of the population. This is curious but true. The rose, sweet pea, geranium and others are flowers of every home yard, but the orchid is little known even by the educated. It is the popular flower of the rich.

It was stated that a flower which was neither a new production nor an improved form of a present flower might for certain reasons become suddenly popular. This statement may be best explained by considering how it was that the present favourite flowers gained that distinction.

Taking first the case of the carnation, one of the most popular flowers of to-day. This is the best example of a type of flower the popularity of which is due to public demands.

With this flower, as in the case of many manufactured goods, the demand created the supply. On the American continent in particular, there has been for many years a demand for a flower which would be ideal, more or less, for home decoration. The American carnation was practically created to fill that demand. Because of its merit as a flower, which will last for days after it is cut without deterioration, and for its usefulness as a graceful vase flower, symmetrical in form and delicately rich in colours, it ranks very high in popular favour. Therefore, because of the many uses to which flowers can be put, there will always be a market for certain types of flowers to fill the definite demands of an advancing civilization.

Who could have foreseen when the sweet pea was first introduced to the public about two hundred years ago, that such a modest little addition to the old favourites of our grandfathers would one day have this said about it : "The sweet pea has a keel that was meant to seek all shores ; it has wings that were meant to fly across all continents ; it has a standard which is friendly to all nations, and it has a fragrance like the universal gospel ; yea, a sweet prophecy of welcome everywhere, that has been abundantly fulfilled." To-day it is one of the most popular flowers. In Britain, in 1911, a prize of \$5,000 was given for the best twelve spikes. Its popularity, it is true, is largely due to the fact that as a cut flower it is almost unsurpassed. But, as a cut flower, it meets quite a different demand to that met by the carnation. The sweet pea is a summer flower and is for every home in the land, since it may be grown wherever garden soil and a yard of space is available. It is rightly called the "poor man's orchid."

The carnation and the sweet pea are discussed here as examples of a type of flower which has been developed (created might be used) to meet specific demands. In this class might be placed the violet, chrysanthemum and other "florists" flowers.

When, however, the case of flowers of the type of the geranium, tulip, petunia and verbenas is considered their popularity, it will be seen, is due to quite different demands. These flowers are used perhaps more largely for spring and summer bedding than all other flowers put together. And it is in this very class that flowers which are not yet "discovered," as it were, might quickly become popular. In such a case it will be less a question of developing a flower to supply a public demand and more of a question of "introducing" it. There are, without doubt, several flowers which are growing to-day with modest grace almost unobserved in our gardens, which to-morrow, after some one has judiciously worked them into the public eye, and proved their usefulness in some particular way, may be as well known and popular as the sweet pea or geranium. This is why it may be stated that a flower need not be necessarily entirely a new production, or a vastly improved type in order to become a favorite. Let a flower be discovered, as it were, from amongst those we now possess and its improvement will of course follow. But the essential is the man who sees the possibilities in a flower and reads aright the needs of a very rapidly developing public taste. The comparatively new work of the hybridist is extremely important and its value will be all the greater when, in conjunction with commercial training and backed by a large knowledge of human nature, the hybridist does his work ever guided by public needs.

From a commercial standpoint there is bound to be money in a good new thing if it takes with any section of the public. This is well illustrated by such flowers as the orchid, the tulip and carnation. The orchid in one sense is not a popular flower. On the other hand it ranks first in popularity in that class of flowers which have come into prominence more on account of some intrinsic merits than because they meet definite and particular demands. The rose is a flower which might be put in this class but it is difficult to limit the "queen of flowers" to any class. But the orchid is to-day the popular flower of many people, especially those who can afford to grow it. It is almost unique as a flower, and its family comprises a wonderful variety of exquisite colors and marvellous oddities of form. For any new type very fancy prices are obtained. A collection of several hundred was recently purchased by one of the largest Canadian florists. In the collection were several good new types. One of these a few weeks after purchase attracted the attention of a visitor who secured it for \$75. A little later this same flower was shown in an exhibition at one of the big American cities, and obtained a first prize. It was then resold for something over \$500. It cost originally \$1.

But present high prices for new flowers are by no means the exception. When the tulip was first introduced into Europe it had a great run of popularity and prices were paid for it which will surprise many to whom such facts are unknown. In the years 1634 to 1637 what was known as the "tulip mania" was at its height. Single bulbs of new varieties in not a few instances were sold for sums ranging around \$500. "A single bulb of a particular variety, called the Viceroy,

was exchanged in the true Dutch fashion for the following articles—two lasts of wheat, four of rye, four fat oxen, three fat swine, twelve fat sheep, two hogsheads of wine, four barrels of beer, two tons of butter, one thousand pounds weight of cheese, a complete bed, a suit of clothes, and a silver beaker, the whole worth two thousand five hundred florins."

A bulb of the variety "Semper Augustus" on several occasions sold for \$2,000. A good story is told of a bulb of this wonderful tulip. A wealthy merchant of Amsterdam bought a bulb for which he gladly paid \$1,500. He left it in the cabin of one of his merchant vessels. One of the sailors in cleaning up mistook it for an onion. He was fond of onions and having herrings for dinner took it as a little seasoning. Soon after the merchant discovered his loss and hunted high and low for the bulb. Meanwhile the sailor had gone on shore. Some one suggested that he had taken it. Then followed a hue and cry after the poor fellow. He was discovered, a little later, by a big crowd which had collected as the chase proceeded, sitting on a coil of rope quietly munching his herring and "onion." His surprise at the infuriation of the merchant and size of the crowd was great, but he honestly confessed that the onion was a "poor one; it had no taste". However, this did not save him from prison because his lunch had been more costly to the merchant than a royal banquet.

It has been suggested that popular flowers of the future must come in order to augment the list of popular flowers for to-day. Some of the present popular flowers may drop out of the race, but whether they do so or not there is room for competitors. For bedding purposes, for instance, any flower which would combine some of

the qualities of the geranium or the petunia with those of the asters would meet with immediate success. Why? Because while flowers like the first two are splendid for bedding they are no good as cut flowers, while flowers like the last while splendid for cutting are poor for bedding purposes. In new countries, in particular, people like to have flowers for show and which they can also cut occasionally. Circumstances do not allow the people of this country, for instance, to grow many varieties of flowers, consequently they seek such flowers as most nearly combine desirable qualities.

There are also several big gaps in the list of perennial flowers which all lovers of flowers would rejoice to see filled, and no doubt in twenty or thirty years time, many plants which we now speak of as "popular flowers of the future", will be found filling these and other gaps which it would be easy to point out as existing in the lists of the floral year. For the purpose before us a brief consideration of this question as here given was considered to be more suggestive than a longer treatise; but anyone interested in it will find much valuable material all around him.



The Director's House and part of a flower border at C. E. Farm, Ottawa. The border is 12 feet wide and 450 feet long, and contains several hundred of the best varieties of perennial plants.

Mendel and His Work.

By PAUL A. BOVING, B.A., B.S.A., Cereal Husbandry Dept., Macdonald College.



CROSSBREEDING or hybridizing among animals and plants has always been a subject of great interest for practical breeders as well as for scientists. It has mostly been practised for the purpose of introducing one or more desired characters into a certain breed. One of the most difficult features of the hybrids to understand is their heredity. As a hybrid results from the crossing of two individuals different in one or more respects there is a possibility of different combinations of their characters, and for a difference in their ability to transmit these characters to the offspring.

There exists an immense literature on the subject, and many well-known scientists since the German Kolreuter (about 1760) have labored with the problems involved in crossing. In trying to understand the investigations in this regard, it is necessary to make a clear distinction between different generations in the cross. Thus on the one hand we must especially consider the first generation, i.e. the hybrid, and on the other, the progeny of these hybrids. It has been shown, already many years ago, that all individuals in the first generation are alike or about alike and that, generally speaking, they give the impression of being an intermediate between the parents. Sometimes they will resemble the father more, sometimes the mother, and it is impossible to predict whether the father or the mother will exert the greater influence on the progeny. In the next generation the offspring present a very different appearance. Here are differen-

tiations to be found almost without number. One would naturally expect to find individuals which resembled the parents more or less, but beside these there will be numerous others, which are entirely different. There may even appear deformities or such peculiarities as can only be understood by a full knowledge of the pedigree of the forms under investigation.

This is about all that can be extracted from those earlier investigations and experiments, and it is quite evident from the literature, which in this respect offers the most remarkable contradictions, that there was no law revealed governing the transmission of characters which in the parents had been considered hereditary. A study of the literature gives us no clue as to the best methods of solving the cross-breeding problem, although it contains much valuable information and observation.

Before 1900 hybridizing was in a way, as one author stated in regard to plant breeding, "a game of chance played between man and plants." The game went on. Some few breeders were winners, but by far the greatest number were losers, because the rules of the game were unknown. These were finally discovered by the Austrian, Gregor Mendel, who discussed them before the Brunn Naturalist Society in 1865. His discovery was published the following year in the report of the Society. But as this publication had a very narrow distribution, it was in existence several years before the scientific world knew anything about it, and it was not until the later years

of the last century that the three experimenting botanists, Correns in Germany, de Vries in Holland and v. Tschermak in Austria, almost simultaneously by independent investigations confirmed the results of Mendel and brought to light his hitherto unknown works.

Johann Gregor Mendel was born in 1822 in the village Heinzendorf in

he felt strong attraction to science. However, his first teacher* was so taken by the young man's unusual talents, that he persuaded Mendel's father to let the son get an education. Education in those days meant comparatively heavy expenses, and the young Mendel had to fight many a hard battle. However, he got through the academy in rather short time and



Mendel's Statue at Brunn.

Austrian Silesia, where his parents were farming peasants of pure German origin. His father wished him to stay at home, and as he had no brothers who could replace him in the farm work when he went away, he would scarcely have started studying, although

resolved to become a minister, in accordance with his mother's wishes. He therefore sought and was in competition with several other candidates,

* Public school teachers are mostly men as well in Austria and Germany as in other European countries.

granted a vacant noviceship in the monastery Konigskloster at Brunn.

After he got his degree, he worked for some years as curate, but his mind was more and more attracted by the study of nature. Already in his youth, his father had made him interested in fruit growing and general horticulture, and later on there is no doubt but that the wanderings in the large gardens of the monastery, planted with herbs, flowers and trees from different parts of the world, opened his eyes to botany. He, therefore, sought to follow up the study of natural science, and in 1851 he was sent to the Vienna University at the expense of the monastery. After a couple of years post graduate work he got his degree, and shortly after acquired a position as professor of nature study at the high school in Brunn. As such he did most of his epoch-making heredity work with plants. In 1868 he was elected prior of his monastery and continued his work with different plants, though he was not able to complete it. Mendel worked besides with bees for several years, and his indefatigable mind was also occupied with other problems, but none of his results on these subjects were ever published, and even his notes have been lost.

The reason why he discontinued his scientific work was, that the Austrian Government, shortly after his election as prior, issued a law of taxation which to Mendel's mind taxed the monastery unjustly, and, like the inflexible champion he was for what he considered right, he was during the latter part of his life mixed up in perpetual controversies which embittered his mind and apparently kept him from fulfilling his life's work.

The difference between earlier investigators and Mendel lies in their

methods of working. Whereas, the former judged the progeny from their general appearance and resemblance to the parents, Mendel, so to speak, analyzed and resolved the parents and the offspring in their separate characters. These he arranged in pairs and judged separately. Furthermore, he found out the necessity of starting with individuals belonging to absolutely pure lines or strains, and he finally examined the progeny of each separate individual by itself. Just as Vilmorin in France was the first man, as far as we know, to use the individual or pedigree method in practical plant improvement work, Mendel is the first who introduced it in pure scientific experiments.

It would, of course, require too much space to give a full account of his methods and the importance of his results, but a short illustration will, perhaps, make the principle clear. Mendel, for example, carried on experiments with peas, which on account of different qualities are especially adapted for demonstrating results in this kind of research work. He found that in a cross between a red flowered field pea (*Pisum arvense*) and a white flowered garden pea (*Pisum sativum*) the first generation all show red flowers, or, in other words, that the red color is what is called "dominant" over the white, which does not appear and is recessive. In the progeny from the first generation, however, the white color reappears and the proportion in the color of the flowers will be three red to one white. Now comes the perhaps most important fact in his discoveries, and that is, that all the white ones will give constant white offspring, or, in other words, that the recessive character will breed true, when it reappears in the second generation. Of the remaining three parts which are red

flowering, one-third will transmit the dominant red character constantly, but two-thirds will continue to divide again in one part constant white, one part constant red and two parts divisible peas.

Mendel worked out his theory and experimented with a number of other character pairs on peas, that is opposite characters, of which one is dominant, the other recessive, such as

round vs. angular shape,

yellow vs. green color,

high vs. low stem,

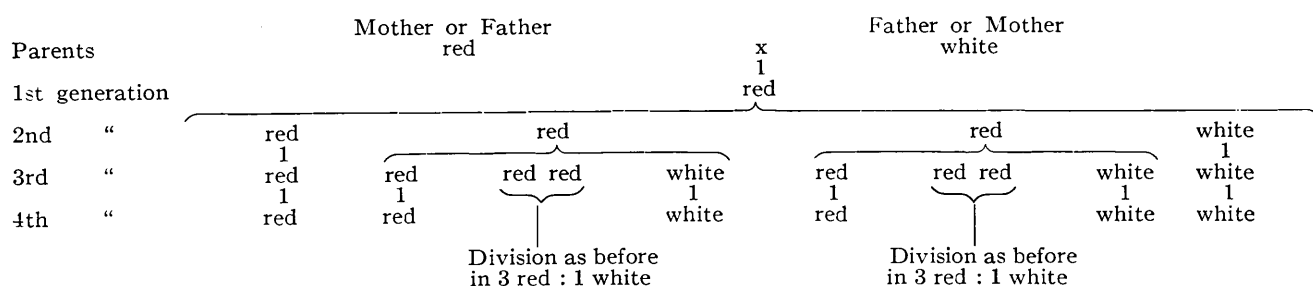
and each pair behaved the same way,

we consider that six character pairs may cause not less than 4096 different combinations and that, if we have to do with twelve pairs of different characters, the possible number of combinations exceeds 16,500,000.

Thanks to Mendel, we are now able to unravel the apparently tangled skein, and to-day breeders of animals and plants avail themselves of the light which his ingenious discoveries have thrown upon breeding problems.

It is not that we have not got enough from Mendel to be thankful for, or that anybody would suggest that he

Diagram of Mendel's law showing the proportion between red flowering and white flowering peas in different generations :—



so that the recessive character showed itself constant when it appeared in the second generation. It is an easy matter to calculate the possible results in a cross if we have only to do with one single pair of known characters, but the work is considerably more complicated where several pairs have to be taken into consideration, and it is certainly no wonder that crossing in earlier days looked like chaos, when

had not done his share and more than that, but what might this man have accomplished, if he had not been troubled and checked by petty administrative cares. He died in 1884, and his statue, which is shown in the picture, was erected in 1910. It carries the following inscription in the German language: "To the Naturalist, P. Gregor Mendel, 1822-1884," and below : "Erected in 1910 by friends of Science."

The Arctiids, or Tiger Moths.

By ARTHUR GIBSON, Chief Assistant Entomologist, Central Experimental Farm.



IN the lepidopterous family Arctiidae, the adults of which are known popularly as "Tiger Moths" and the caterpillars as "Woolly-bears," there are some extremely interesting and very beautiful forms. Several species are of economic importance; others, owing to their great rarity, are seldom met with. The moths of the different species vary much in size, the largest measuring, when the wings are expanded, about three and one-quarter inches, and the smallest slightly more than half an inch. In colour and markings they are also very variable. The poet Keats says :

"All diamonded with panes of
quaint device,
Innumerable of stains, and splendid
dyes,
As are the Tiger Moth's deep damask wings."

The caterpillars, as the popular name "Woolly-bears" indicates, are clothed with dense clusters of hairs, which as a rule are conspicuously coloured. In some kinds these hairs are stiff and even, while in others they are slender and of varying lengths. Most Arctian caterpillars are general feeders, living upon the foliage of almost any herbaceous plant, but a few kinds occasionally feed upon the leaves of shrubs and trees.

About sixty representatives of the family Arctiidae have been found in Canada. Some of these occur abundantly almost every season, as, for instance, the Fall Webworm (*Hyphantria Textor*) which is but too common in

many Ontario and Quebec orchards; others are so extremely rare that very few examples are to be found in collections of insects. There are many points about the life histories of many of the species still awaiting discovery and much work yet remains to be done. It is not the intention of the writer to weary the reader with scientific data bearing on this field of investigation. Many of our common forms of insects are repeatedly seen by observing people and it is only with the idea of drawing special attention to a few of these belonging to the above family, that the brief notes which follow are presented.

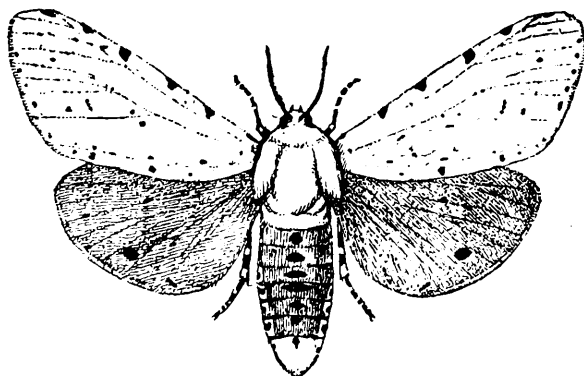


Fig. 1.—The *Acraea* Moth (after Chittenden).

THE ACRAEA MOTH.—The *Estigmene Acraea*, the larva of which is known as the Salt-Marsh Caterpillar, is abundant in many parts of Canada, towards the end of May and during June. Like many other kinds of moths this species is often attracted to lights at night. The two pairs of wings of the female moth are pure white, spotted with black, as is also the body, excepting the central abdominal segments above which are orange. The male (Fig. 1) differs from the female in being slightly smaller and in having the two hind wings bright

buff yellow. The Caterpillar (Fig. 2) of this moth when mature measures $2\frac{1}{4}$ inches in length; the body is dark in colour with yellow markings along the sides. The hairs on the body are slender and mostly reddish or reddish-brown. In Autumn when the caterpillar is full grown it makes its cocoon in any convenient place where shelter can be obtained and changes to a pupa, in which state it remains until Spring. Early in the past century the caterpillar appeared in destructive numbers in the salt marshes about Boston and was then given the above popular name. It is not, however, restricted to salt marshes and its name is therefore misleading. It is a general feeder and will attack almost

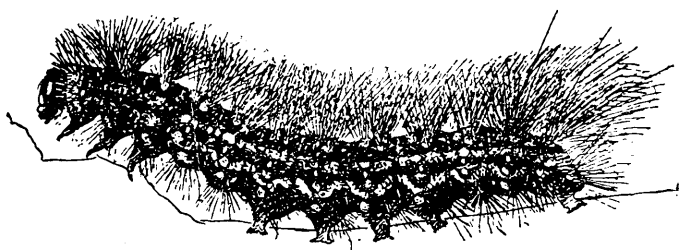


Fig. 2.—The Salt-Marsh Caterpillar (after Chittenden).

any low-growing plant; it is commonly found in flower and vegetable gardens.

THE ISABELLA TIGER MOTH—*Isia isabella*.—In Autumn or early Spring everyone must have noticed the caterpillars of this moth hurrying along roadside paths, sidewalks, railroad tracks, etc., as if on a most pressing errand. This woolly-bear, which is called the Hedgehog Caterpillar, has indeed a definite object in Autumn, viz—to find a suitable place where it can spend the Winter, snugly rolled up, beneath a piece of plank, a flat stone, or an old log. On the arrival of Spring it again wanders around and finally selects a similar place to that where it passed the Winter and spins an oblong oval cocoon, composed of coarse silk and the hairs of its own body interwoven. The tufts of

hair at either end of the larva are jet black, those in the middle of the body being bright rust-red. The moth is a rather sober-coloured and heavy-bodied insect of a dull grayish tawny yellow; the front wings are marked with dusky stripes and spotted with black; the hind wings are also spotted with black and sometimes flushed with salmon red; there are three rows of black spots on the body, one down the centre and one each on either side.

THE YELLOW WOOLLY-BEAR—*Diacrisia virginica* (fig. 3). This also occurs in gardens feeding chiefly upon low growing plants. It resembles somewhat the Salt-Marsh Caterpillar, but is not so large and the hairs are shorter and the body not so dark. It also lacks the distinct yellow markings on the sides of the latter species. Although called the Yellow Woolly-Bear from the colour of the hairs of the majority of the caterpillars which were first studied, these hairs are not always of a yellowish tinge; in many specimens they are of a dark rusty or reddish-brown colour, or even nearly white. When full grown, in

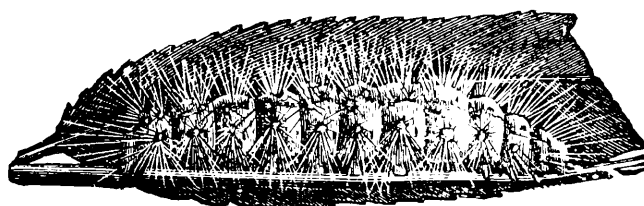


Fig. 3.—The Yellow Woolly-Bear.

Autumn, this Woolly-Bear spins a cocoon similar to that of the Salt-Marsh Caterpillar and passes the Winter as a pupa inside of this coarse silken cover. In May and June of the following year the moths appear. These do not differ very much, the wings of both sexes being snowy white, marked with a few black dots. There is a row of black spots down the centre of the abdomen and another on either side; between these there is a longitudinal orange stripe.

The moths of the genus *Apantesis* (fig. 4) are typical Tiger Moths, being beautifully marked with transverse and longitudinal stripes of white; in most species the ground colour of the front wings being black. There is a most remarkable variation in these markings even within a single species. The hind wings of most of the species in this



Fig. 4.—*Apantesis phalerata*.

group are of some shade of red; in a few the colour of the hind wings is yellow, all being banded or spotted, more or less, with black. The caterpillars of the moths of this genus also vary considerably. In some the hairs are almost wholly black, in others black and rust red, and in others again silvery or whitish. Some have a conspicuous flesh-coloured stripe down the middle of the back, others a row of spots, either whitish or yellowish.

The caterpillars of the *Halisidota* moths, of which there are three different kinds in eastern Canada, all of which occur more or less commonly every season, are examples of arctiid larvae which feed on oak, elm, willow, basswood, ash and other trees. They become full grown in Autumn and Winter as pupae within oblong-oval cocoons composed of the hairs from their bodies interwoven with silk. The moths emerge during the following June.

THE HICKORY HALISIDOTA, *H. caryae* (fig. 5), is the commonest species. The caterpillar has a black head and the body bears dense tufts of white hairs, with a ridge of black hairs down the centre of the back,

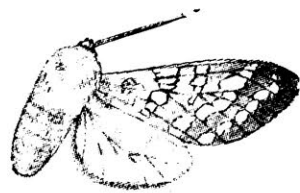


Fig. 5.—Hickory *Halisidota* Moth.

and two pairs of long black pencils on the 1st and 7th abdominal segments. When full grown it is about one and a half inches in length. The ground colour of the front wings of the moth is ochre-yellow but is heavily dusted with brown scales. On these wings are five more or less transverse bands, or rows of spots, joined together. The outer two rows are pearly, the others mostly the ground colour of the wings edged with brown. The hind wings are semi-transparent. The female moth lays her eggs in a cluster on the underside of

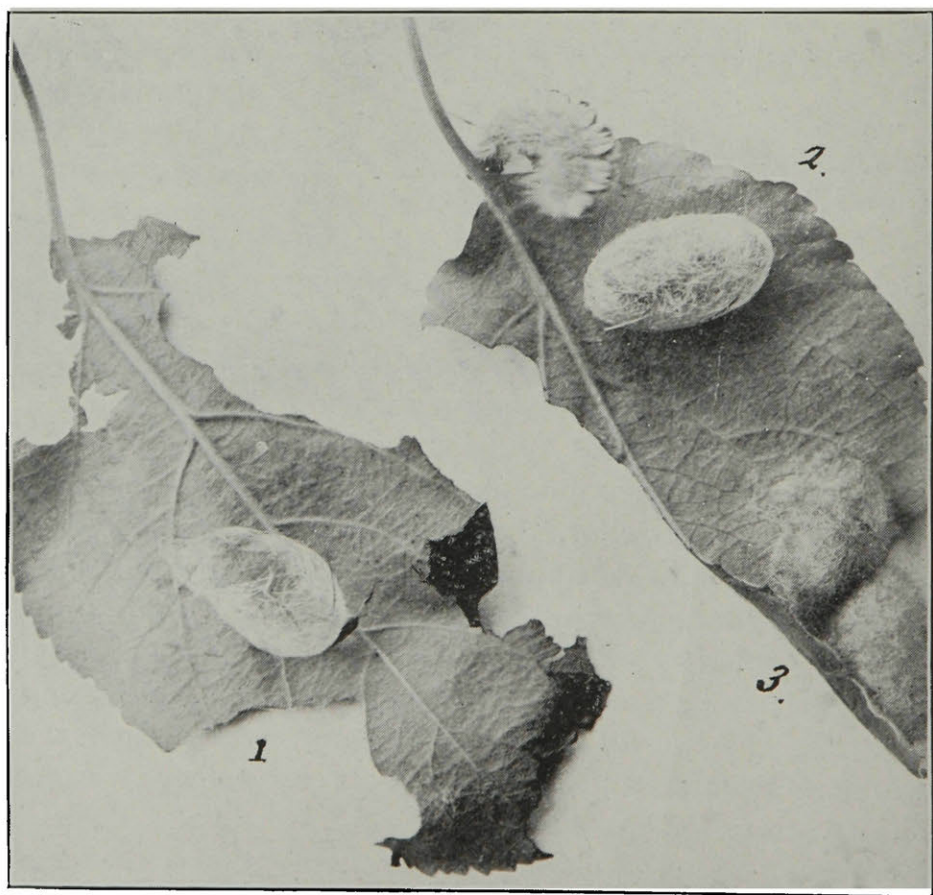


Fig. 6.—Hickory *Halisidota*; 1, 2, 3. Three stages in the construction of cocoon.

a leaf and the young caterpillars in their earlier stages have the habit of congregating. As they approach maturity, however, they separate and wander off by themselves. The figure herewith (fig. 6) shows the adult caterpillar and various stages in the construction of the cocoon.

THE SPOTTED HALISIDOTA, *H. maculata* (fig. 7), has front wings also of an ochre-yellow colour, spotted with blotches of dark brown, the outer of which forms a distinct band across the wing. The other blotches form four

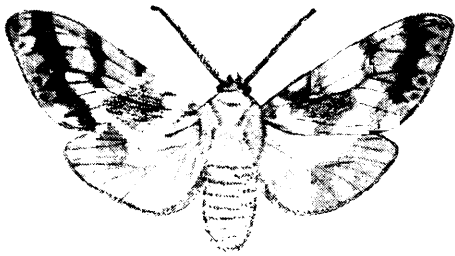


Fig. 7.—Spotted *Halisidota* Moth.

partial transverse bands. The hind wings are pale, without spots. The caterpillar of this moth is black covered with tufts of bright yellow and black hairs, the black tufts being on the four anterior and three posterior segments and the yellow tufts on the remaining segments. The latter are centered down the middle of the back with a row of black tufts.

THE CHECKERED HALISIDOTA, *H. tessellaris*, is slightly larger than the two

other species and expands, when the wings have been spread, about two inches. It is a delicate looking moth with semi-transparent wings of a buff colour. The front wings which are narrower, making them appear more pointed than in *maculata* and *caryae*, are checkered with five irregular transverse bands, margined narrowly with black, the 2nd, 4th and 5th of which extend across the wing. The caterpillar when mature is over an inch in length, with a black head, the body covered with hairs of a delicate buff yellow colour. In front are four dorsal blackish pencils, or conspicuous tufts, besides which are two pairs of shorter lateral white tufts, and near the end of the body, a pair of whitish tufts. At Ottawa the basswood seems to be a favorite food plant of the larvae although they are frequently found on hickory, walnut, beech and not uncommonly on fruit trees, to which, however, they do no serious harm.

When disturbed all of these *Halisidota* Caterpillars have the habit of falling to the ground and curling up, remaining in such position for some little time. They can, therefore, be collected easily from the trees or bushes upon which they feed, by simply holding with one hand an inverted umbrella under the food plant and tapping the branches with a light stick held with the other hand.



An Economic and Comparative Study of a Few Useful and a few Troublesome Grasses.

G. H. Cutler, B.S.A., Lecturer in Cereal Husbandry



HIS article has been written with a view of enabling those interested in grasses to become more familiar with some of the useful and some of the troublesome forms in the more commonly occurring species, which are generally regarded as of secondary or even tertiary importance in grass culture in Canada.

GROUP I.

Kentucky Blue—*Poa pratensis*. Fig. 1.
Canadian Blue—*Poa compressa* Fig. 2.

These species may be found wild in nature, growing side by side, although the Kentucky Blue generally predominates. They are distributed over the whole of Eastern Canada and to some extent locally over Western Canada. Despite the fact that they occur so commonly, their distinctive economic and structural differences are not generally known.

The Kentucky Blue, also known as June Grass or Spear Grass, is indigenous to America. It is probably the most commonly occurring of all our native grasses. The leaves, stems and heads are of a true green color and are not of a bluish tint as the name would seem to indicate. The stems are quite erect, round (note Illustration) and smooth, possessing few leaves and rising from one to two feet high depending upon location. Furthermore, the stems are surmounted by open panicles which are characteristically wide at the base and taper to the apex. During mid-summer these assume a yellow tint. With the return of moist conditions in the fall a fresh growth of basal leaves is induced. By means of its fibrous, creeping root system it spreads rapidly and soon covers waste places with a dense, durable turf which is much prized by landscape gardeners.

Canadian Blue or Wire Grass is readily distinguished from the Ken-

tucky Blue. Its hard (hence the popular name—Wire Grass) flat, short stems which bend laterally before ascending, its short, numerous rather scanty leaf growth, its compressed panicles, all of which present a distinct bluish tint, easily mark this grass at a glance. Moreover, the Canadian Blue continues to send up stems throughout the entire summer, a fact which has doubtless gained for it a place in lawn and pasture mixtures. Like the Kentucky Blue it possesses both fibrous and creeping roots, although the turf produced is not so uniform as that of its rival. Both these grasses thrive on a wide range of soils except on sharp gravelly lands where Kentucky Blue generally fails to form a close sod.

GROUP II.

Perennial Rye—*Lolium perenne*. Fig. 3.

Western Rye—*Agropyron tenerum*.
Fig. 4.

Couch Grass—*Agropyron repens*. Fig. 5.

The true rye grasses all belong to the genus *Lolium* and include many cultivated varieties. The principal grass among these is the Perennial Rye which is reputed to be the oldest cultivated grass in England. On account of the moist atmospheric conditions in England this grass is highly regarded as a pasture and hay grass although others are rapidly gaining in favor. Our extreme Canadian climate, together with the widespread popularity of Timothy, limits the use of Perennial Rye, despite the fact that both are short rotation grasses.

Western Rye or Slender Wheat Grass, sometimes known as Bunch Grass, is a native of North America. It was first brought under cultivation in Manitoba, and has since attracted considerable attention throughout the Western prairies. It does not, however, belong

to the genus *Lolium* and is therefore not one of the true Rye Grasses though it somewhat resembles these. The distinctive structural differences, as is revealed by Figs. 3 and 4, are that the true Rye Grasses have their spikelets set edgewise on the central stem with but one empty glume, while on the Western Rye the spikelets are set flatwise with two empty glumes. Western Rye is well adapted to Canadian conditions. It gives a satisfactory yield of hay and pasture but unfortunately it is somewhat lacking in palatability. It is later than both Perennial Rye and Timothy and will therefore never replace either in a mixture with Red Clover. Although Western Rye has never received great attention in the Eastern part of Canada, it may yet compel recognition on account of its many commendable features.

Couch grass has doubtless received more names complimentary and otherwise than any other grass in existence. It needs no introduction here. While Couch or Scutch may possess certain redeeming features for certain locations, it is very questionable if it should be employed in any system of rotation, or under any circumstances be accorded a place in farm practice, as its long list of bad qualities far more than offsets any good ones. Unlike its relative the Western Rye, it continues to produce an ever increasing number of creeping root stocks until, if unchecked, it becomes sole occupier of the soil.

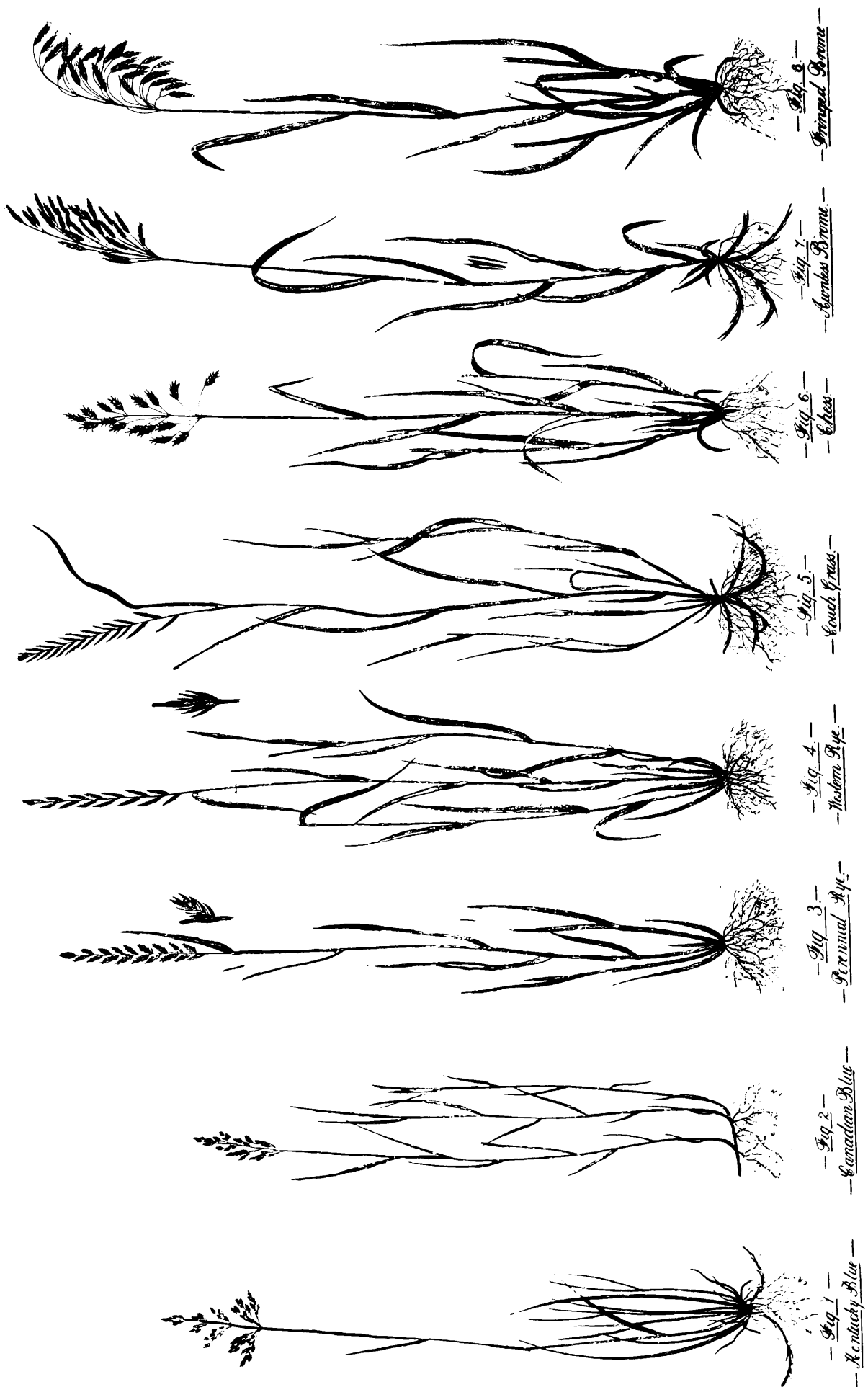
GROUP III.

Chess—*Bromus secalinus*. Fig. 6.

Awnless Brome—*Bromus inermis*.
Fig. 7.

Fringed Brome—*Bromus ciliatus*.

Chess or Cheat is a native of Europe and was probably introduced into this

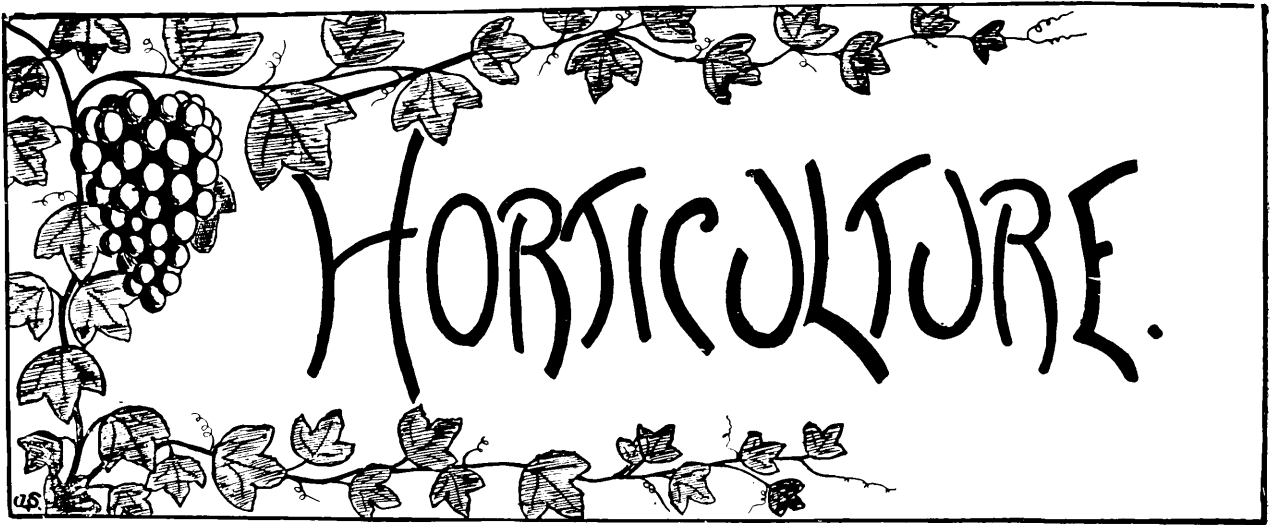


country accidentally in seed wheat. It has been a wheat field nuisance ever since, especially in the Eastern part of the continent. Chess occurs readily where winter wheat has been killed, but does not, as is erroneously supposed, originate as a result of degeneration in wheat. To produce chess the seed of chess must be sown. In stem and leaf, the plant somewhat resembles wheat, but the heads are entirely different, as may be seen by the illustration. As a hay or pasture it does not compare with its near relative, the Awnless Brome, on account of lack of quality and quantity of herbage. This together with the fact that it is an annual makes it of little value in general culture.

Awnless Brome has gained a widespread reputation throughout Canada since its introduction in 1886. It is an erect perennial with leafy stalks from two to three feet high. The leaves are large and numerous and extend well up the stem, thus forming a dense mass of foliage. It differs from the Chess in that the panicles are generally more spreading with longer and more slender spikelets. As its name indicates, it is without awns. Awnless Brome adapts itself to a wide range of soil and climatic conditions and for this reason has found a permanent place in West-

ern Canadian Agriculture. East of the Great Lakes, where other grasses of less dangerous habits can be grown with equal success, its place is obviously limited. Its extensive creeping root system is such a pronounced objection to its culture as to more than counter-balance its several commendable features. As a rotation grass, Awnless Brome may be regarded almost on the same plane as Couch Grass. On the other hand, where the soil is rocky, shallow or not arable, Awnless Brome grass may be considered valuable in a permanent mixture.

Fringed Brome is not so well known as is the Awnless. Structurally it differs from the Awnless in that it possesses broader leaves, larger and more drooping heads, awned spikelets and a fibrous root system. When grown side by side they may be distinguished by the lighter green color of the leaves and stems of Fringed Brome. This grass shows special adaptation to moist, rich lands, although it has given good results on comparatively dry and light situations. It produces quite as satisfactory crops of hay as Awnless but rather poorer aftermath. While it is a safer rotation grass than Awnless its late maturing habits will prevent it from taking a prominent place in general culture.



Co-Operation Amongst Farmers.

By CHARLES P. BYERS.



REGARDING this subject so many articles have been written at different times, and from various points of view, that it would seem as though the need of pointing out the advisability and practicability of organizing societies, with this aim in view, should be a thing of the past.

But, notwithstanding all that has been written and proven by experience, it does still seem a difficult matter, in many localities, to bring the farmers together and get them to unite in establishing a "Co-operative Society" on a satisfactory businesslike basis.

Now, in my opinion, the principal reason for this lack of desire to co-operate is that even yet there are many farmers who do not fully grasp, indeed, are quite ignorant of the substantial advantages to be gained from adopting such a course. We, therefore, who see more clearly the benefits of co-operation, must not lose courage, nor become impatient, but with tongue and pen keep on agitating the matter until *all* are brought to see and believe as we do.

So, once again I undertake to point out as clearly as possible a few of the advantages to be derived from the

farmers of a locality—say within a radius of ten or twelve miles—being united in action.

For example, let us take up the marketing of the early small fruits.

In an unorganized district, each farmer goes off to the market town with possibly only a half or quarter load. He knows that in order to make a living profit the berries should be sold for a certain price per box. But, sharp, shrewd buyers are on hand and play off one farmer against another in such a way that the price is so cut down that the profit is nil.

There is no sense in this, because the supply of these fruits seldom, if ever, meets the demand, and the man who has had all the toil and trouble of raising them might just as well derive some profit from doing so.

Now, see the difference were these men united in a properly organized society. One of the members would be appointed to collect all the fruit from a given number of farmers, thus making a proper load and at the same time allowing several men to stay at home and go on with their work. The Society would also fix a certain profitable price which the buyers would be forced to accept, instead of foolishly ruining each other by

needless competition. Oh, would that farmers could all fully grasp the fact that *combination* spells *prosperity*, *competition*, *poverty*.

Would that all classes of society could realize this. The success of the whole country depends on the farmer, and it is simply "killing the goose that lays the golden egg" to hamper him. Let our farmers once reap their merited profits and immediately the manufacturers of agricultural implements, carriages, automobiles, pianos, sewing machines, and so forth, get their share of it. The same will be the case with merchant and tradesman; everybody will be the better, none the worse.

And this result of co-operation in marketing small fruits is even more important with regard to apples, potatoes and poultry, where an adequate and proper cold storage is a necessity, and could be easily established.

The Provincial Government will assist in furnishing a proper plant whenever a community will give a sufficient guarantee of security up to a certain amount. This could easily be given through co-operation, and the liability would be much more than met by the profit secured by the safeguarding of the farm products.

Another great advantage to be derived from co-operation is the *saving in the cost of supplies*. Just consider what a saving would be effected were the necessary materials for—say, spraying, to be purchased wholesale and delivered by "freight," instead of each farmer getting his own little quantity separately, with the additional heavy charge of express rates. One of the crying needs of our country might, I believe, be soon remedied by farmers co-operating. I refer to the *notoriously bad condition of our country roads*. I heard recently of a most successful experiment worked out in two days by the combined effort of

fifteen farmers along a three-mile section of road. The one to whom the happy thought came took his buggy in the evening and called on his neighbors, asking them if they would turn out on a certain date with their teams, and making an old fashioned "bee," draw gravel from a near-by pit, deposit it on the road, while those who were not needed to drive, could grade and level.

This plan was most heartily and cheerfully agreed to, and the farmers' wives and daughters prepared and served an ample and appetizing luncheon in the church hall, which all enjoyed together. The result was most satisfactory. At the end of the second day they not only had the best three-mile stretch of road in the county, but all declared they had enjoyed a really "good time."

I hope many of our farmers have read the story in the "Country Gentleman" of August 24th, entitled "The Potato as an Educator, or The Effects of Good Farming Methods on the Fortunes of a Village." If any of my readers have not seen this article, I hope they will yet secure this number of the "Country Gentleman" and read it carefully, as it strongly emphasizes some of the points I have been trying to make.

One might go on writing columns, pointing out such material advantages to be derived from co-operation, but in addition to these, and no doubt of even greater importance, is the *spiritual uplift* which is given to a community working together in harmonious unity. The present lack of confidence in each other exhibited in an unorganized district disappears. Men and women begin to feel that they are united in *studying each other's interests and working out the common good*.

More time is secured for recreation and social intercourse; greater attention is given to reading in order to find out

the best way of doing things to secure the most satisfactory results. The church and the school are appreciated now as never before, and instead of a weary, monotonous round of daily life, the farmer enters into the under-

standing of the prophetic song the angels sang at the Saviour's birth, as given in the revised version—

"Peace on earth, toward
Men of good will."

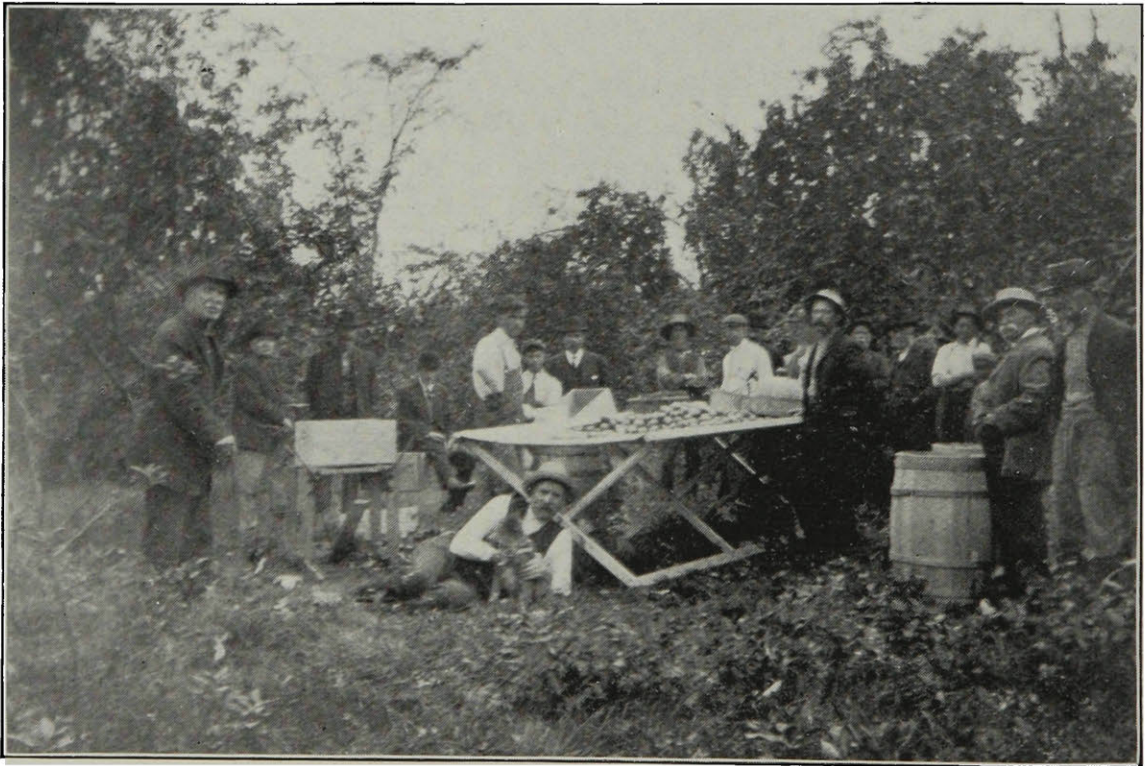
Notes on Orchards in Rougemont and St. Hilaire.



PROSPECTS for the apple crop in this district are good this year in orchards that have obtained necessary attention. But those which have not been sprayed either for insects or fungous diseases present a very poor appearance.

sity of spraying as many as four times in seasons such as we have had this year; for in orchards which were not given so many sprayings and where the work was not thoroughly done some spotted fruit may still be found.

The advantage of lime-sulphur over Bordeaux mixture in preventing rus-



Demonstration in Apple Packing.

The tent caterpillars have practically defoliated most unsprayed trees; the fruit on these is very small and a large percentage of it is spotted. However, the majority of the fruit growers in the county have come to realize the neces-

setting of the fruit is very clearly marked in the demonstration orchards; the trees sprayed with Bordeaux having in many cases over thirty per cent. of the fruit russetted while those on which lime-sulphur was used during the whole

season have generally less than five per cent.

Round headed borers are to be found in almost every orchard, many young trees being killed or permanently injured by girdling. It is very important that the orchardists examine carefully every tree year after year, in early fall, and dig out the borers with a knife or with a wire, in order to

keep the orchards free from this pest.

The apple trees have lately suffered much from the attacks of aphids. Some growers have been fortunate enough to notice them before the leaves curled, and have sprayed them with kerosene emulsion, but some of the young trees in the nurseries have been badly damaged. L. V. PARENT.

Summer Meeting of the Pomological Society.



THE annual summer meeting of the Quebec Pomological Fruit Growing Society was held at St. Famille, Isle d'Orleans, on Wednesday and Thursday, September 18th and 19th. The delegates left Quebec for the Island

The sessions were held in the Assembly Hall of the Convent de Notre Dame and were attended by a large and enthusiastic audience.

The meeting was called to order at 2 p.m. by the Rev. Father Leopold, who occupied the chair, owing to the



Delegates at the Summer Meeting of the Pomological Society.

on Wednesday morning at 9.30, and on arriving there were met by Mr. Gosselin, president of the Isle d'Orleans Agricultural Society, and driven to St. Famille, a distance of ten miles.

absence of the president, Mr. L. P. Newman.

The afternoon session was given up to the reading of the following papers:—Injurious Insects and Fungi, by Prof.

Locihed; Renovating Old Orchards, by Henri Cloutier, and Establishing an Orchard by the writer, all of which called forth considerable discussion and many important points were brought out.

At the evening meeting addresses were given by Hon. J. E. Caron, Minister of Agriculture, Hon. L. A. Taschereau, and Mr. J. C. Chapais.

Mr. Caron in his address congratulated the society on the excellent work it was doing for the advancement of fruit growing, and expressed his willingness to assist in any way that he could.

He pointed out the value of co-operation not only in fruit growing, but in all branches of agriculture and emphasized the need of encouragement along this line.

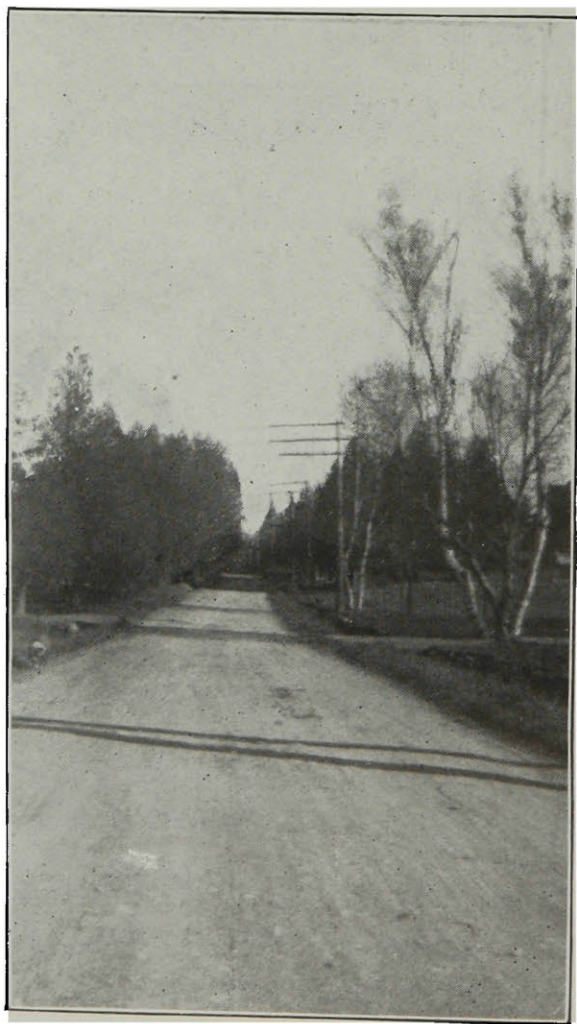
On Wednesday the meeting was called to order at 9. am.

The first item on the programme was a paper on Co-operation, by Mr. Robt. Brodie, in which he dealt at some length on the selling of fruit co-operatively.

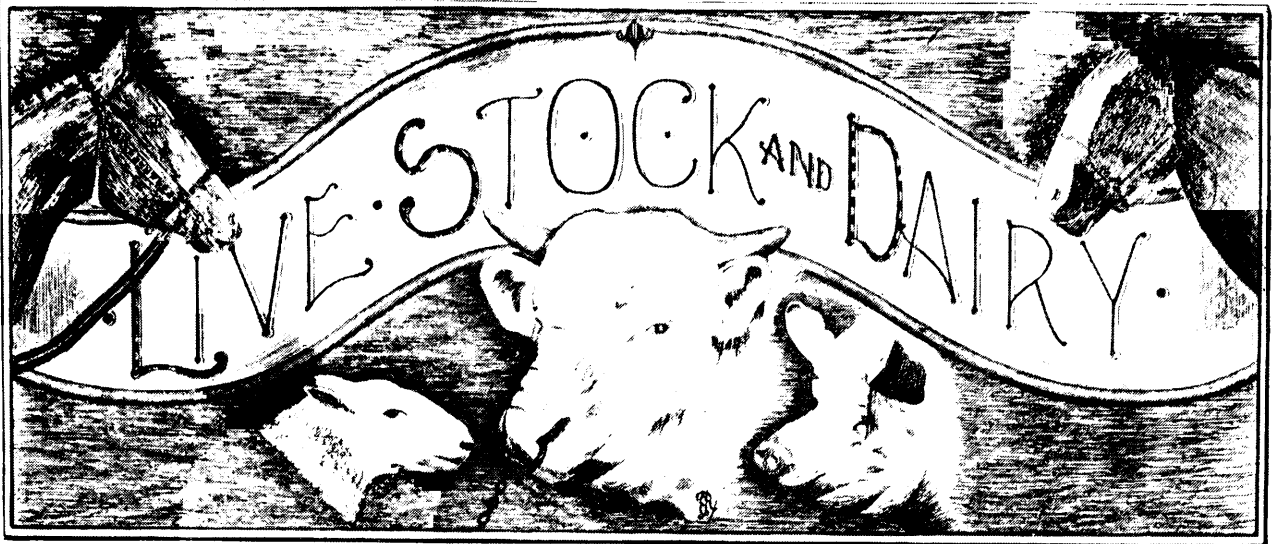
He was followed by Rev. Father Leopold with a paper on Insecticides and Fungicides, after which a demonstration in box packing was given.

A vote of thanks was tendered to the curé for the hospitable way in which the delegates were entertained, and the meeting was adjourned.

The delegates left by boat for Ste. Anne de Beaupre, en route to Quebec and their respective homes.



Senneville Road.



Two Factors in Dairy Farming.

By W. J. REID, B. S. A., Lecturer in Animal Husbandry.



VERY applicable definition of Dairy Farming has been given in the following statement.

"That kind of management of cows and soil that shall promote the greatest degree of efficiency in either."

Few men fully realize the significance of the foregoing definition in arriving at the ultimate outcome of their attempt to make the law of compensation apply to their position when the efficiency of either soil or herd is at fault. The man who blames the climate or seasons for his small returns is the man who has never realized that his herd or crops would have been better had he attended to his business in the breeding and raising of his stock or in the intelligent tilling of the soil.

The trouble lies in the fact that the average farmer has not the right idea of profitable efficiency before the reality of stern consequences forces him to it. The man who has developed a herd of cows with outstanding qualities of pro-

duction has a different idea of what production in a herd implies than his indifferent neighbor. So is it in handling the soil. Point to a man who studies his soil through its adaptation for producing crops which give maximum results with his herd and you will see a progressive farmer.

Further analysis, which is by comparison, will reveal such a marked difference between the responsive efficiency of well-cared for herds and soils and those of a low standard, that as a guard against discouragement and a guarantee of success the two main points must be kept in mind—efficient cows and efficient soil.

To have efficient cows is to have individuals possessed of productive dairy blood, that is, possessed of the quality of drawing as high a margin of profit as possible over and above the feed consumed. To attain this requisite the breeder must keep in mind that nothing but the best is permissible in his herd. He must select the best, by way of milk records and pedigree of production. He

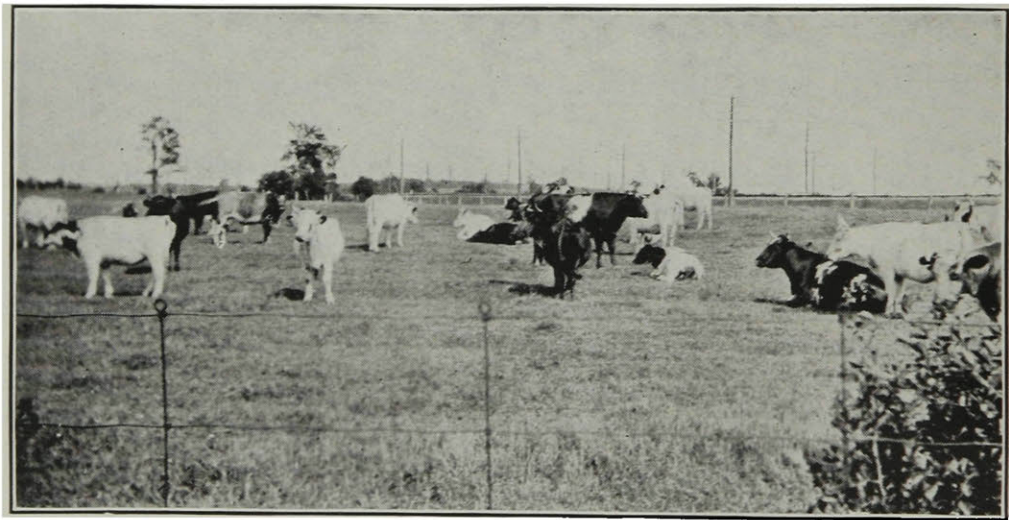
must breed from the best and after setting an economical standard discard all those falling below it.

The many other phases of the subject must needs be merely mentioned, as a detailed discussion would not be permissible here. The most modern way of maintaining a dairy herd will demand the modern stable, the patent stable fixtures, a modern system of ventilation, the silos, the machinery and necessary conveniences until the breeder looks askance and complains of expense.

True enough, but the expense is for permanent improvements and the earnings of a modern herd is much greater

know its adaptability to produce crops suitable for a dairy herd. He should know the various demands of these crops on the soil, also how to maintain the fertility so that a continuous high average yield may be obtained each year.

The problem of adopting a suitable rotation of crops is of vital concern. To be of the highest value it should be one that is adaptable to his conditions by virtue of its special advantages. For instance, the four year rotation of grain, hay, hay or pasture and hoed crop has the commendable feature of having the two years in which clover



Herd at Pasture.

than in the past. Then the law of compensation is at work and must be considered here. The farmer is a different force now than formerly. He has more pride and pleasure in his work and is working for a different market for his produce than before. The value of every animal he has is much greater, and any he may sell will bring a better price under the new and better conditions than under the old and cheaper system. By breeding a different class of cattle he meets a demand for better quality which brings more profit, and in all, the value of his property is much greater.

To have efficient soil the farmer must

may be grown as a nitrogen-gatherer. This supplies one of the most valuable soil constituents needed for plant-growth, at a low cost. Also, the root crop acts as a soil cleaner by way of having special cultivation. Then the grain crop following receives the benefit of the cleaning and special cultivation of the previous year. The response to the fair treatment is shown by heavier yields of grain and hay, provided that manure is added to the soil, preferably with the root crop, for here the best opportunity is given for incorporating it with the soil. However, many and varied are the systems of rotating crops

adopted by cereal experts, and each system has its special advantage for a given soil or set of conditions. The farmer must become acquainted with these by inquiring and by observation, that he may be able to adopt the best.

The majority of scientists contend that the farmer must not rest even after adopting the best rotation of crops. If all the crops grown on the farm are fed to live stock and the manure carefully conserved it will be found to maintain the farm in a high state of fertility for many years. Time will indicate however that there is a decline from the original fertility. No matter how carefully the crops are handled and the manure kept it is impossible to return as much fertility to the land as the crops took from it. In the first place there is the loss in handling. Secondly the growing animal retains for itself considerable of the elements of fertility which do not find their way back to the land. Also, in the handling of manure there is a certain amount of fermentation, leaching and the like that takes place. Here there is a field for study in the elements of plant food and their relative importance as such in soils. Most

scientists tell us that the rank and file of soils contain an abundance of the elements of plant food except phosphorus, potash and nitrogen. An average supply of nitrogen may be obtained as suggested in the growing of legumes (clover). Most soils are well supplied with potash except some low-lying lands. It therefore resolves itself, to a large extent, into the purchase of phosphorus to use on practically all soils that have been farmed for several generations. Farmyard manure reinforced with phosphatic fertilizers would suit such a general case, but the difficulty of prescribing for each case that might be given is great. This rests largely with the farmer himself. To accomplish the desired result he must study the experimental reports as given by the best authorities and attend the public meetings given for his benefit. In general he should co-operate with the sources of information that seek to establish his calling on a par with any other. Through their aid he can be of assistance to himself, which can be exemplified in no more lasting way than by the evidence given in the profitable efficiency of his herd and soil.

Establishing a Flock of Sheep.

HE last year has witnessed a very thorough inquiry into the Sheep Industry of the Dominion with the result that the farmers of Quebec have been strongly advised to pay more attention to their friend in wool.

The Province of Quebec in many parts is pre-eminently adapted to the raising of sheep on account of the

rough uncultivated land that is to be found on many farms. This the farmer can utilize in no better way than to graze a flock of fifteen or twenty ewes, thereby reaping a handsome rent in the form of wool and lambs.

The comparatively small outlay necessary to start a flock is a favorable feature. The increase comes so quickly that from a few ewes as

a foundation a flock of ordinary size can be had in two or three years. This gives ample time for the owner to have gained knowledge and experience to enable him to properly manage the flock.

The best policy for a beginner is to start with a few grade ewes of the particular breed decided upon, and a pure bred ram of the same breed secured from a competent breeder. If, after a time, a purebred flock is wished for, it is an easy matter to get firmly started in that line by gradually substituting pure-breds for grades.

In choosing a breed it is always best to take into consideration the con-

average conditions a breed that combines wool and mutton production fairly well will be found as profitable as any. The prospective breeder should observe and become firmly convinced that he is making a wise choice and then make no changes, as changes are disastrous while a wise choice will receive better attention and naturally give better returns.

The best time to select the ewes for a beginning is in September or October. The ewe at this time of the year is in such condition that she can be readily judged and her ability to raise lambs from the view-points of quantity and quality can be seen.



Shropshires.

dition of pasture, etc., that the sheep will be expected to thrive on. Any of our more modern breeds will thrive fairly well under average conditions and treatment, but some will give better returns in a given locality than others. For instance, some of the large breeds have originated in localities where luxuriant pastures were prevalent and as a consequence they could not be expected to give economical returns on rough or short feed. If, however, some of our smaller, more rugged breeds were placed on scanty fare they would prove a benefit to the breeder in a majority of cases. For

A ewe may appear in thin flesh but if she has produced a pair of thrifty lambs that can be placed on the market as a first-quality product she is the one from which to expect the most profit. When bought in the fall, the time before the first return will be short, and the profit will come with the least possible trouble.

When possible it is best to select young ewes that have borne their first crop of lambs, and at all events not beyond the second crop. They should be of medium size for the breed, uniform in type, strong and of healthy appearance. As an indication of health

the general appearance must be one of vigor, a clear skin and a soft velvety fleece of uniform weight covering the body.

In choosing the ram be satisfied with nothing under a pure-bred, and have a good representative of the breed. Look for the same evidence of health and thrift as in the case of the ewes. A lamb will be useful for the first season to get a start, but the common practice of using a lamb every year will not command as sure results in vigorous stock as having an aged ram to mate with the unrelated ewes.

The general care of the ewe does not demand great attention but the lack of proper attention will show itself when the crop of lambs begins to come. Clover hay fed in sufficient quantity with turnips (2 to 3 lbs. per ewe per day) makes a ration that is easily provided and one of the cheapest. A short time before lambing the roots should be cut down in quantity and the grain increased slightly, to have the ewes in fair fleshing for lambing. They should also receive careful attention and be kept in warm quarters so that the lambs will not receive a chill. After the lambs are born, the roots may be increased to promote milk flow.

Three points which the breeder should

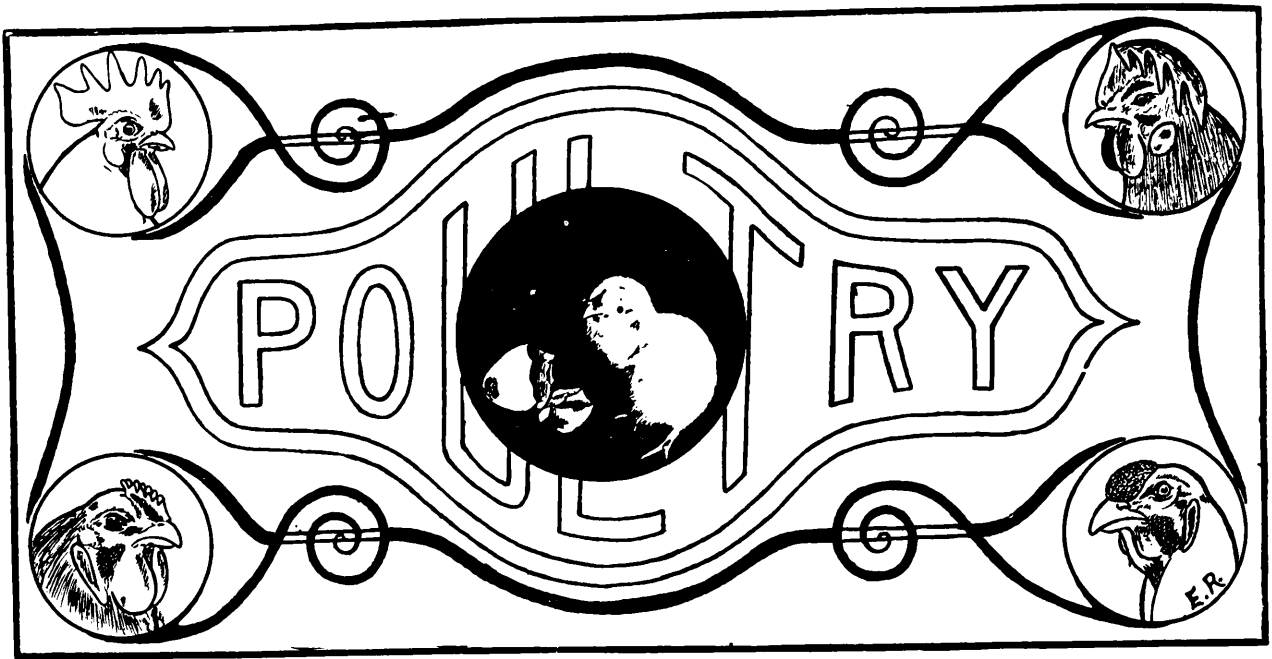
keep in mind are dipping, castrating the ram lambs, and docking. In the majority of cases this requirement is usually taken as of minor importance, while in reality, it is of great importance, not only from the standpoint of the appearance of the flock, but also as an aid to greater profit in selling. The dipping should be done twice a year, before the sheep go to pasture and before they enter winter quarters. Any of the reliable sheep dips may be used with satisfactory results. The castrating and docking should be done when the lambs are from ten days to two weeks old. The ewe lambs that are to be kept for breeding should not be mated with the ram until the following year, unless they have developed exceptionally well.

The small outlay in furnishing housing for sheep is an important factor. As long as housed from dampness or drafts they will stand the cold and thrive better than if made warm. A single-boarded shed with a paddock for exercise, and a comfortable double-boarded place for lambing will make all necessary quarters.

Racks should be provided for the coarse fodder, and a protected trough for the grain and roots, if fed pulped.

W. J. R.





Co-operative Marketing of Eggs.

By J. H. HARE, B. S. A. Ontario Co., Ont.



TO say that the condition of the poultry department of the average farm is deplorable is not, in the writer's estimation, putting it untruthfully. To substantiate this opinion I have but to ask the reader to bring to mind the general conditions in point of health, breeding, housing, care and management of the majority of farm flocks in his own community. What proportion of them are pure bred? What amount of thought is given to proper breeding? Some farmers are careful in the matter of egg fertility (though many are extremely lax in even this matter), but have they any further object? Are they aiming at heavy egg production, special winter laying early maturity, the plump full breast, sturdy and vigorous vitality, or are these points almost altogether unheeded by them? I am bold to answer this last question in the affirmative and I make this assertion not without careful study and much personal investigation. Why the farmer is guilty of this laxity, in regard to his poultry, and not to his

larger live stock, is somewhat difficult to say, at least with any degree of certainty. We cannot accuse him of the same laxity in breeding his bee or his dairy cattle. Indeed he spares no efforts in carefully scrutinizing the available sires in the community, and after some deliberation makes his selection, and with confidence in his own good judgment, speculates, and often most successfully, upon the type or performance of the offspring. The same is true of his attention to the hogs and horses, and the increase in profit is more than invariably used in the working out of the farmer's inexplicable breeding policy.

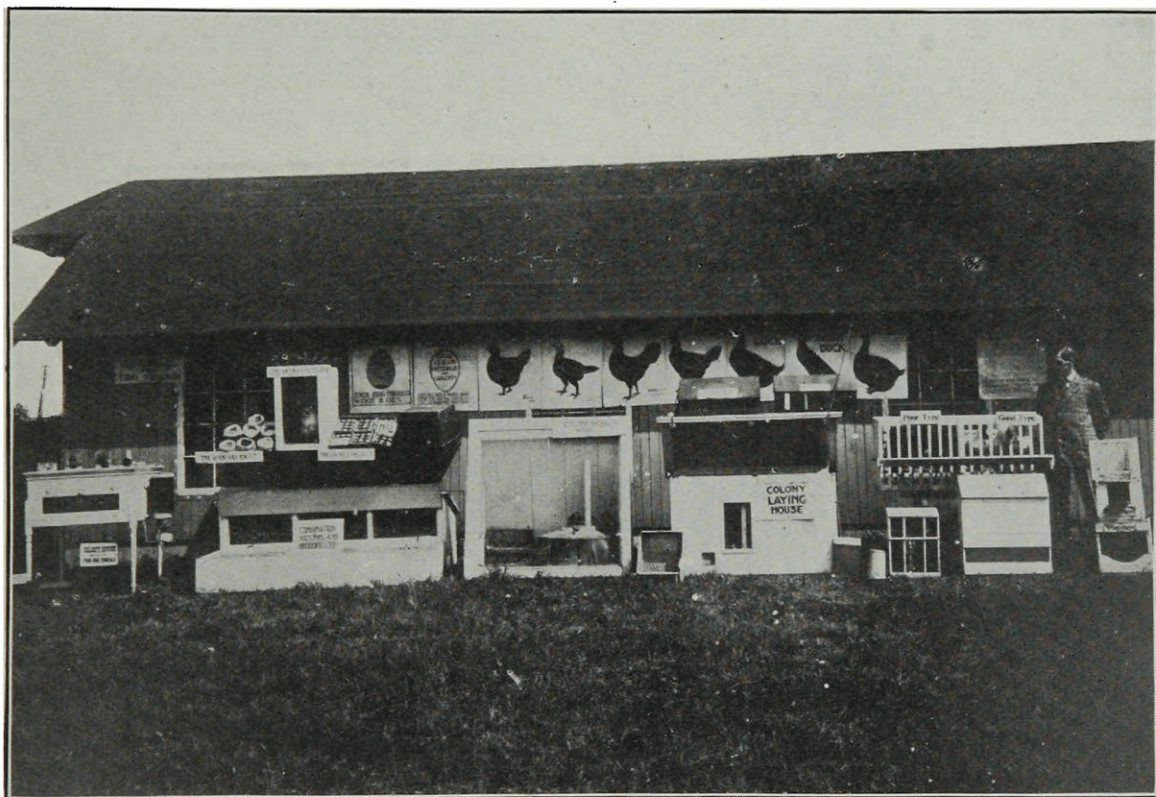
The health of the farm flocks in certain districts is seriously bad, tuberculosis being the principal disease. This cannot be wondered at when one finds conditions in houses and runs so insanitary as to be most favorable for the existence and development of the disease.

Perhaps the most serious enemy of the average farm flock is the Red Mite, whose prevalence might be said to be universal and whose damage is in proportion to the lack of attention given

to the poultry which in the foregoing introduction the writer has endeavored to strongly emphasize.

The above will perhaps give the reader, without going further into detail, the impression that the average farmer looks upon his poultry as a second rate enterprise, if indeed he has any interest whatever in it. This accentuated disinterestedness naturally makes difficult any propaganda which has for its object the betterment of the industry.

cannot be because of the returns from the poultry. There is abundant evidence of greater returns from the poultry when capital and labor are considered, than can be shown from any other branch of the farmers' live stock. Though the weekly returns may not show large figures, yet in the annual statement the aggregate figures, where a fair-sized flock is kept and where it is fairly well handled, show very much to the advantage of this branch of the farmer's



Poultry Exhibit on the Demonstration Train.

However, the situation has to be faced, and the first step logically is to bring about an awakening of interest on the part of the farmer for his poultry. It seems necessary at the outset before much can be accomplished, to inoculate him as best can be done with the germs of what is rudely termed the "hen fever." This, however, is not as a rule impossible, as most farmers to-day are not unprogressive, but rather the reverse, and many will listen with interest to any proposal commensurate with the improvement in the attention given. Why, then, is the poultry neglected? It

business. Even in the face of the grossest kind of neglect, the industrious hen persists in yielding her proprietor a profit of some size at least which the farmer cannot help but see, if he will give the matter but a moment's consideration, yet in the face of this he continues to esteem her quite too small to claim a portion of his time and attention. In view of these facts, one is forced to conclude that, at least, one cause of the farmer's apathy in regard to his poultry is in a distorted idea of the true size and importance of the enterprise.

To go more into detail concerning

conditions on the average farm, one might say that haphazard breeding was the chief evil discovered. Indeed, in many instances the object, or perhaps more correctly the result of having no particular object, seems to be the production of a flock, the individuals of which possess the greatest possible dissimilarity. In some flocks it is difficult to even judge with certainty the breed which predominates. We find two serious results coming from this indiscriminate breeding : first, there is a diminution in the size of both fowl and eggs. This is principally due to the fact that the Leghorn or some other of the lighter breeds have been used as male birds, causing a diminution in the size of both fowl and eggs. Secondly, there is a great lack of uniformity in the size and color of eggs, and also in the size and appearance of market fowl, all of which counts so very much against advantageous marketing.

In approaching a farmer with a view to getting his support in the organization of a better system of marketing his eggs, and to convince him of the faulty nature of the present system, the following is the line of argument presented :

As a result of the present system of marketing, there is a loss in eggs, or rather a depreciation in their value of from fifteen to twenty per cent. This loss is due largely, if not altogether, to the case-count system of purchasing this commodity. A merchant, in vieing with his neighborhood, at times inflates egg prices to secure the farmer's trade. If he loses on eggs he makes sure to make the loss good on the miscellaneous wares of the farmer's purchase. This practice is harmful, because eggs of uncertain quality enter the trade and are not discriminated against. It costs not a little to transport this worthless proportion to the market and it costs a very great deal, by way of the employment of

experts, to cull out the bad eggs and grade the remainder. The farmer deceives himself in thinking he profits by disposing of eggs of uncertain quality. Commission merchants know what shrinkage to count on at certain seasons of the year and they naturally pay a price which is sufficiently low to cover that shrinkage and the additional expense it involves.

There is still another source of loss due to bad eggs being marketed, and that is the loss due to curtailed consumption. The trade is unfavorably affected when housewives find that they have paid out their good money for bad eggs. The next time something is substituted for eggs, fewer eggs are purchased, the price goes down, and the reputation of this commodity is seriously impaired.

The egg trade requires a marketing system, the working or selling principle of which is based on quality, and this system ought to be strictly adhered to by every interested party through whose hands the eggs pass. When such a system is established it becomes profitable to produce and market only eggs of first quality. Small, stale and dirty eggs would be discriminated against, and only those of the best grade would command a profitable price. This would give the industry the proper stimulus, and induce farmers to raise only those breeds which lay good-sized eggs; to keep their breeds pure, so that the product will be uniform in size and appearance; to adopt the most up-to-date methods in the care and management of the flock, and to market the product in such a way as to get the most out of it.

Such arguments as these seem to appeal to the thinking farmer even if he has not been much of a poultryman, and some will quite readily endorse and agree to co-operate in an effort to establish an egg selling association of an "Egg Circle" in the vicinity, the pur-

poses of which are to dispose of the product of the members to the very best advantage ; to establish in the community an unexcelled reputation for good eggs, and to enable its members to incidentally enjoy and profit from the stimulus that such an organization invariably gives to the industry.

There are those, however, who do not so readily fall in line with the movement, because of a lack of interest in their poultry, and because of a suspicion of any new thing of this kind. They must see it pass through the experimental stage before they endorse and support it. Others object on the ground that it will seriously disorganize the present system of trade, and that this will unfavorably affect the community. There are many merchants throughout the country who, I am sure, would be amazed if they knew how carefully their interests were guarded by those with whom they trade. Why the farmer will sacrifice his own interests to those of the merchant is still another problem yet unsolved. There are still others who think it too troublesome to take the precautionary measures which are necessary in the production of a first class article.

Indeed, it may be said that 80 per cent of the farmers solicited will endeavor to make some plausible excuse for remaining on the sideline and reserving their support. Therefore, the organization must necessarily start with a few, and time must be taken to teach the neighborhood that the suspicion and the many objections are not well founded, and to prove by demonstration that eggs marketed according to the methods of the Egg Circle will bring a better price.

This, however, takes more time than one would at first expect, for no sooner is a Circle started than the new organization finds arrayed on every quarter enemies of the most formidable description ; store-keepers city egg buyers,

huxters and others, who appear to be full of wrath and malice and determined to squelch the movement in its infancy. This determined effort, however, will not long continue if the farmers remain faithful and loyal to the new enterprise ; though it is worthy of note that in one particular section in this county during the past season, abnormal prices prevailed in the surrounding vicinity for several months after the formation of the Circle.

To organize an Egg Circle, especially in a county or district where the movement is altogether new, it is wise to select a section where there will be the fewest difficulties. Seek to first organize where there will be the least resistance. More difficult sections will organize easier later on. The following course of procedure is suggested, as the result gained in this county, where there are now, organized and operating five Circles, having a total membership of two hundred and fifty farmers. First, solicit the farmers in the community where it is the intention to organize, and thus seek to convert individually every farmer approached to the gospel of co-operation. When the time is ripe, a meeting should be called. Usually a man strong in his views in favor of co-operation should be invited. At this meeting, after strongly denouncing the present antiquated methods of marketing and with equal emphasis supporting the merits of co-operation a vote of the meeting should be asked for, and in the enthusiasm of the hour, it is not, as a rule, difficult to get a decision favoring the formation of a marketing association of an "Egg Circle." Five or six directors should be appointed at once and this done, half the battle is over. The organizer should meet with the directors on a very early date; have them appoint a chairman and a secretary; arrange for a collector who is to work on a commission basis, and make plans to at once canvass the

farmers in the community, by dividing the territory and making each director, or each pair of directors, responsible for an allotted district. The organizer should accompany the directors in this work of canvassing the neighborhood, for he will find it necessary to argue still further to induce most farmers to enlist their support. The secretary arranges for the distribution of stamps and instruction sheets. Crates are supplied by the firm with which the Circle decides to deal.

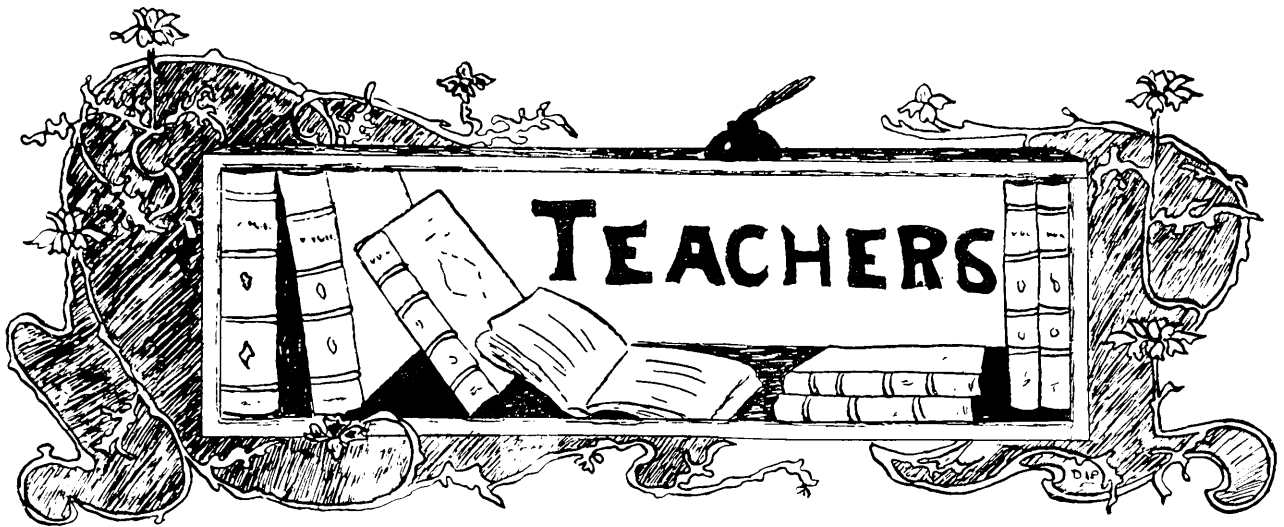
Before a farmer is admitted to the Circle he must agree : to market the product of his own flock only ; to market all of the eggs from his flock excepting those used in his own household and those used for breeding purposes ; to refrain from marketing eggs that are more than seven days old, eggs from found nests, very small or dirty eggs, or any others of questionable quality ; and to neatly mark each egg marketed with the stamp supplied by the association.

It is the experience of the writer that if those in charge of a Circle formulate a very arbitrary set of rules and stipulate that a violation of the said rules will result in immediate expulsion, the outcome will be disastrous. Some theoretical co-operators may object to this, but I question if any other policy will work out in practice. Strict observance of the rules should, of course, be kept continually before the farmer as being the secret of success, but it must be kept in mind that the average farm flock does not as yet command much interest from the farmer, and is not as a rule looked upon as a business proposition. It becomes important, therefore, to first arouse the farmer's interest in his poultry, enlarge his view of the enterprise ; enable him to see the advantages of the better methods which the Circle patrons have decided to adopt, and by means of this education he will soon develop into a desirable member.

The egg gatherer is usually the manager of the Circle. He collects the eggs on a certain day each week, prepares the same for shipment, and delivers them to the shipping station. He also receives the returns for the shipment, reserves his commission (which is from one cent to two cents per dozen, according to the season of the year), pays the freight or express charges, places to the credit of the Circle Bank Account any fraction of a cent which would make payment to the farmers difficult, and with the balance he returns to the members as high a price as possible. Bad eggs, however, are not paid for. The commission merchant who receives the eggs instructs the candler to carefully report the stamp number on all bad eggs. This enables the manager to make the reductions in the accounts which correspond with these numbers. The size of the aforementioned Circle ranges from 30 to 90 members. The business done by the smallest Circle has averaged some two hundred dozen weekly for six months, commencing with the month of April.

The largest Circle has an average business during the same period of eight hundred and fifty dozens weekly, going as high in the period of high production as a thousand and fifty dozen. The advance in price from that which it would have been had there been no Circles has been from two to three cents per dozen.

Results from an educational standpoint have been decidedly satisfactory ; greater interest in poultry is very evident ; good attendance at poultry meetings is now the rule ; inquiries for information regarding methods of management, feeding, housing, etc., are increasing in number, and plans in many instances are being made to enlarge the size of the flock and to give it that attention it so well deserves.



Dr. Sinclair's Speech at Shawville.

DURING the recent summer holidays, several of the leading Protestant Educationists of Quebec conducted a campaign on behalf of the schools of the Province. The points urged throughout were the value of teacher training, the great national and social importance of the rural school as the centre for community life, the consolidation of the small schools and the payment of better salaries as the only means of retaining the qualified ones in our own Province.

Dr. Sinclair's speech at Shawville is of especial interest to the School for Teachers. It was in substance as follows:—

Why should parents send their daughters to Macdonald College School for Teachers? First, because it is a good investment. It will cost \$250.00. At the conclusion of the term the student receives a professional certificate, valid in any school in the Province of Quebec and for life. She is thus independent and prepared to earn her own living in a respectable occupation. While every one knows that the teacher is perhaps the poorest paid of all public servants, I think there is a general agreement that the work is highly respectable and

involves something of a missionary enterprise.

Second—The training given at Macdonald College furnishes an excellent preparation for life. The students' health is carefully considered from the very beginning, and while Macdonald College is no sanatorium or refuge for invalids, it is an established fact that almost without exception students leave the institution with robust health and give every evidence that the pure air and water, the wholesome food and carefully considered hours of work, sleep and recreation have accomplished what was intended.

Sound scholarship is the fundamental aim of our work. The teachers of the Institution are men and women who have won their spurs in other Institutions, have taken careful academic and professional training and are capable of imparting knowledge to others. In analysis of mental processes the student forms a habit of logical thinking which can be gained in no other way. In dealing with children, as a student of child nature and a practical teacher, the teacher-in-training has the best possible preparation for the duties of the home.

The social side of the life at the College is perhaps its most important

feature. Macdonald is unique throughout the world as an Institution where teachers-in-training are not confined to what may be called the pedagogical attitude but come in contact with professors and students in the School of Household Science and in the School of Agriculture, and thus can scarcely fail to be inspired with what may be called the modern rural spirit. The purpose from the social side is, so far as is possible, to prepare a young woman to take her place in any society, intelligently and naturally. There is in no sense a desire to give what may be called the training of the "smart set"—a training which returns a student to her home out of joint with nearly everything which she finds there, dissatisfied with herself and hypercritical of parents and friends. The motto of Macdonald College is "Master for Service," and I know of no other Institution which trains a young woman more fully in wholesome ideals and better fits her to return to her home with a high appreciation of all that she finds there and with a desire to help in every way she can to make the home life of everyone more efficient, sweeter and happier than it was before.

Lastly, the farmers of Quebec should send their daughters to Macdonald College for the national good. The greatest surprise of the last hundred years was

the defeat of Russia by Japan. It is an historic fact that Japanese mothers committed suicide when they learned that their sons were unfit to enter military service.

If this century is to be Canada's century our people must be prepared to be leaders of men. They cannot be so prepared without trained teachers in the schools. It is a statement capable of scientific demonstration that a teacher who has spent a year in professional training will, during her first few years of experience (and few rural teachers teach many years), teach as much in one year as she will in two without such training. For example, the children in Macdonald College Day School and in the Primary Schools of Montreal learn to read fairly well in one year of schooling. In most rural schools these results are not reached in less than five or six years of training. The teachers in a large number of rural schools in the Province have had no professional training of any kind.

The remedy consists in farmers sending their daughters to train at Macdonald, and in the public taking care that the conditions and salaries are such as to induce these young women to return and teach the schools in their own districts for a number of years.

Women Teachers and the Suffrage.



PROF. JOHN DEWEY, of Columbia University, recognized as one of the very foremost men in the scientific-philosophical world to-day, has offered some very interesting arguments from the educational standpoint, in favor of the suffrage for women. One of these, rather striking and unique, is in substance as follows :—

The right to vote is to a man a thing so valuable that if possessed of patriotic pride, he holds it a thing without price. It is the culmination of his personal freedom. His vote in itself may have but little direct influence; it is one of thousands; yet it stands for so much, that were he deprived of it, he would feel it a keen disgrace. His whole attitude to life would suffer a change; his interest in a government of which he had no part would become unnatural and lifeless.

It is reasonable to believe that women have formerly had little or no knowledge or appreciation of things historical and political, partly, at least, because they have been deprived of the right of participation in the affairs of the state of which they form a part. Woman is not, under our present government, a citizen in any true sense of the word, and her interest in citizenship is of a distant,

impractical kind. In fact, very few women could tell the bare facts of the plan of government of our country.

If we grant that the great aim of the schools is a social one—the training of the country's youth, in and for citizenship, we are forced to confess that the present-day arrangement under unenfranchised teachers seems an anomaly. The great and reasonable complaint of the world outside, that the schools do not connect up with life, seems to a considerable extent the outcome of a condition of affairs in which the great majority of the teachers have had and can have but little to do with professional, business or political life. Women without citizenship, without the spirit of participation which comes as the culmination of citizenship, in the franchise, are attempting to train in citizenship.

If the educational system of a nation is to accomplish its object it seems that its teachers must be citizens in the full sense of the word. Even for the good of the boys alone in our schools, the women must be given the right of suffrage; must become citizens in full, or (and the alternative is seemingly entirely impossible), men alone must be recruited as teachers in our public and high schools.

R. W. E.

The French Course at Macdonald.



COURSE in French of three weeks' duration was held at Macdonald College during the past summer.

It replaced the summer school held last year at McGill, but was slightly different in its nature. The French Course of 1912 was primarily intended for teachers of the language in this province, to give them a greater facility in the speaking and teaching of French, and consequently was less literary than pedagogic in character. Consequently, too, the number in attendance was not so large as that of last year.

The Course began on June 24 with an oral examination, given by Dr. Walter, of McGill. A certain degree of fluency in speaking French was demanded; but almost all the candidates measured up to the standard required. A few, however, were admitted as "irregular students"—they might attend all the lectures, but were not encouraged to expect a specialist's certificate.

Mr. F. R. Robert, who is associated with Mr. Curtis in the teaching of French in the Montreal schools, took charge of the course. The other instructors were M. Dumais, who lectured on Phonetics; MM. Bellefontaine and Peck, who formed the groups for conversation; and Misses Greig and Tanner, as teachers of model lessons in the Practice School.

Each day's work began at seven-thirty in the morning, with breakfast, at which many students, to speak truth, were late. Every meal was a conversation lesson in French, for English was taboed, and one cannot be silent throughout even a breakfast.

At twenty minutes past eight the first lecture began. During the first week of the course M. Peck gave a reading lesson at that time; afterward the hour was occupied in the study of phonetics with M. Dumais. The rest of the morning was spent in practical teaching, with discussion and criticism of the lessons given. Three classes of pupils in the first, third, and sixth year of French respectively were gathered from the long-suffering children of Ste. Anne's, and in spite of extreme climatic conditions, the small martyrs gave surprising attention to the lessons they received. The lessons were taught for the first few days by Mr. Robert and the Misses Tanner and Greig; afterward the classes were taken by the students, who received marks on this teaching. Only dinner recalled the linguists from the Practice School.

At three in the afternoon all assembled at the front of the Women's Building for conversation. If the weather permitted, the grass under the trees on the campus was a favorite resort; otherwise the reception-room was adjourned to. Various devices were employed to add interest to the conversation period. Sometimes games which necessitated the use of many French words were played. Sometimes subjects of conversation were chosen in advance, such as the Suffragette Movement and Reciprocity, and each student was expected to contribute to the discussion. Sometimes again the group simply talked spontaneously. Usually there were two groups in charge of M. Bellefontaine and M. Peck respectively. The work of the day ended with a lecture on composition by Mr. Robert.

Almost every evening something in-

teresting and useful was going on. Professor Biéler, of the Presbyterian College, gave several lectures on Rome, Florence and Paris, as well as on literary subjects; these lectures were well attended and much enjoyed. From time to time soirées were arranged among the students themselves, consisting of scenes from Molière, of recitations and songs.

The excessive heat which lasted during more than half of the three weeks of the course made it a little less agreeable. But at Macdonald it was scarcely ever necessary to go actually out-of-doors, so the direct rays of the sun could be avoided.

The course ended July 12-13, with brief examinations given by Mr. Robert and M. Dumais. In reality the whole course was an examination, as all the work done was considered in the award of certificates. These were of four kinds: Advanced, Provisional and Permanent; Elementary, Provisional and Permanent. The high standard adhered to in the award is shown by the

fact that of the thirty-five students who took the course, seven or eight alone will receive a permanent certificate, about a dozen more a provincial, while the remainder do not rank as specialists, although they, no doubt, profited by the course.

All the students will agree in pronouncing the three weeks spent at Macdonald very enjoyable as well as beneficial. Dances were given by the students in the drawing class and by the Agricultural students; and a most pleasant evening was spent in practising French songs at the Teachers' Residence. These were moments of relaxation in a strenuous life; for who could avoid work in the face of the untiring example of Mr. Robert? Looking at the course at a distance of several months, one recognizes that in spite of the shortness of time, the results accomplished and the progress there made were truly marvellous.

A. M. MACKINNON,

Granby, P.Q.



The "Empress" passing St. Annes.

The English Teachers' Tour in Canada.



ON July 26th a party of thirty-four English teachers left Liverpool on the "Corsican" for a tour through Canada. The party was under the auspices of the National Union of Teachers, and was in charge of Mr. F. W. Goldstone, M.P.

After a very pleasant voyage the party arrived at Quebec where special observation cars were in waiting to take them through the city. In Montreal they visited Mount Royal and other places of interest under the guidance of Mr. Alfred Blanchet, and in the afternoon paid a visit to Macdonald College. The visitors spoke highly of Macdonald, many of them regarding it as "the most completely equipped

educational buildings they had ever seen."

After leaving Macdonald the party visited Ottawa, Toronto, Niagara Falls, and Hamilton. Wherever they went they were royally treated, and their praise, both of the hospitality of their hosts and of the beauty of the Canadian scenery, was profuse.

The tour must have been of considerable value to those who were fortunate enough to be in the party, for not only is their personal experience widened, but they are enabled to add a spice of real life to their lessons on Canada, instead of making them the mere lifeless recitations that geography lessons unfortunately so often degenerate into.

Summer School in Art.



IT is with a great deal of pleasure that we recall the strenuous three weeks spent in the Summer School in Art, held at Macdonald College, under the management of that most charming and skilful of directors, Miss Goodenough, Assistant Supervisor in Art Work for the schools of the city of New York. It was held during the first three weeks of July of this year.

As we recall the work of those days it is the thought of the Director that comes first, last, and always, the genius that enthused people to rise with the dawn, and pursue their labors with indefatigable zeal, such as she once and again affirmed she had met nowhere outside Canada.

It was with the desire to improve the art work in the schools of the Province of Quebec that this summer session was first planned, and it was certainly a happy thought of the McGill authorities to choose this most interesting, beautiful, and comfortable of places in which to have it carried on.

When the students in Art arrived at the Women's Residence, they found the Summer School in French well under way. In all about thirty students were enrolled, drawn from the teachers of Montreal, Sherbrooke, and from many other smaller places. One lone man, the only representative of his sex, came from Toronto. The classes were held in the Manual Training Room, and in class room No. 26; and in many

ways the work was facilitated by the courtesy and kindness of Mr. Emberley, Director of Manual Training for Macdonald College, who was a constant visitor at the Class, often staying hours and joining in the day's work.

The work taken was largely that outlined by the Prang School of Art, and the speed, skill, and cleverness of Miss Goodenough, the Director, made the work grow apace. By a few skilful strokes, and a brief pointed explanation

the first to say unhesitatingly that the time had been most pleasant and most profitable.

Unfortunately the "hot spell" was on, and work was at times made more difficult by the intense heat. But in spite of this the students worked on an average five and a half hours a day in the Class Room, and the sketching parties ceased only with the loss of daylight.

The work covered consisted of free-



Students Sketching.

of the method, she was able to lead her pupils to new fields of thought and activity, and also to make them see how to make this branch of school work, not a mere tiresome and oftentimes hopeless process of imitation, but a means of development of the varied powers of brain, hand, and eye.

In the class were many who had themselves been supervisors of this kind of work, and they made the keenest and most enthusiastic students, and at the close of the session they were

hand and perspective drawing, brush work in water, in colors and black and white, simple construction work suitable for public school children, such as the making of a portfolio, a tablet holder, stencilling, block printing, and the simple binding of a book of such dimensions as could be done in a schoolroom with no apparatus except needle and thread, binding tape, and a pastepot.

The work throughout was largely suggestive, a bit being given and the possibilities of expansion shown, so

that a teacher of any initiative could enlarge and improve upon what she had received, and find many outlets for the exercise of her genius in this direction

In any work covering so large a field, and confined to so brief a time, the whole success or failure depends upon the genius of the Director, and those of us who were fortunate enough to come under the spell of the teaching of Miss Goodenough readily place her among

the *real* teachers, with a positive genius for teaching. It was the unanimous desire of the students of Class '12 to meet her again at some future opportunity of a similar nature, and to have the privilege of receiving new inspirations. It is only reasonable to hope that the schools of this province will this year feel the benefit from this summer's work.

J. MULDREW.

KEY TO CUT OF EDITORIAL BOARD.

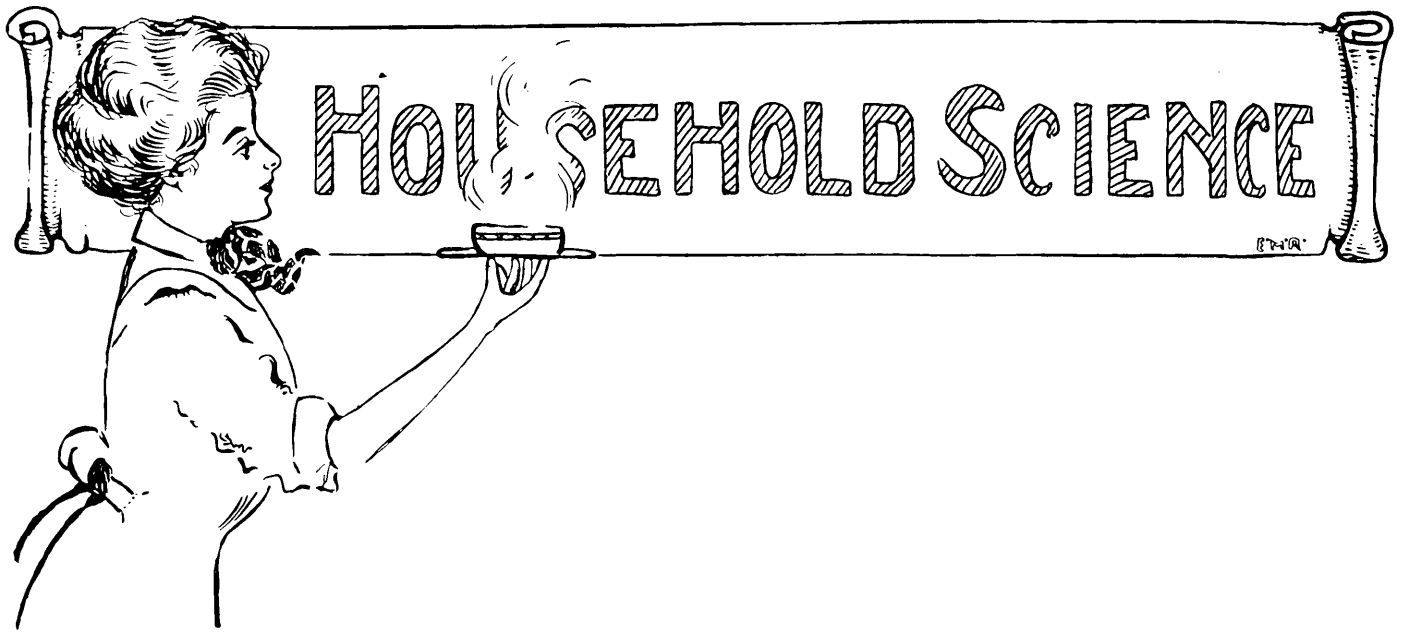
Left to Right—Front Row—Ford, Miss MacPherson, Miss Ouimet, Miss Reynolds, Muir.

Second Row—Richardson, Miss de Villiers, O'Brien, Miss Mills, Dash (Editor), Miss Ayre, Du Porte, Miss Bender, Gorham.

Third Row—Lothian, Miss Goodchild, Miss Porter, Miss Buzzell, McLintock, Le Lacheur, Miss Kilburn, Miss Travers, Taylor.

Fourth Row—Baily, Ricker, Raymond, Reid, Drayton, Ritchie.





Canadian Cheddar, a Valuable Food.

CHEESE A NUTRITIOUS FOOD.

By MRS. E. B. RUTTER, School of Household Science



FROM the agricultural point of view cheese is an important commodity, but up to the present time the great value of this article of food has not been fully appreciated by housekeepers.

There seems to be a widespread belief that it is suitable for use chiefly in small quantities, as an appetizer or as an accompaniment to other foods. Consequently we find it added to a meal which already supplies an abundance of nutritive material. Why has not cheese been used in quantity, as an integral part of the diet, and why is it not holding the place which a highly nutritious and cheap food should hold at the present time? We know of no reasons, but there are several causes. One is habit, which makes the meal seem incomplete without meat; another is that since cheese has a more pro-

nounced flavour than meat it is not so likely to be generally accepted as the chief food of a meal. Again, there is always one member of the family who does not relish cheese in quantity. Cheese is also commonly believed to be a food difficult of digestion. Perhaps the most important reason is that housekeepers, through lack of knowledge and experience, are much less skilful in the arrangement of bills of fare in which cheese is the central food than they are in arranging menus in which meat is used.

At present the whole art of arranging dietaries needs developing. There is abundant evidence that over-eating, where it exists, is due to the fact that meals are not intelligently planned. People often continue eating after they have taken enough of total bulk because they have not had all they want of some particular kind of food. The

meal has contained too large a percentage of tissue or body-forming food (proteins), or too much energy-producing food (starches and fats), has been too moist or too dry, too highly flavoured, or not sufficiently flavoured. Bill-of-fare-making calls not only for skill in combining flavors and producing textures but for a thorough knowledge of food values which would lead to a knowledge of food-combinations and food substitutes. With this knowledge, and a knowledge based upon science of the common methods and proper temperatures of cooking the typical food-stuffs, e.g. foods rich in either protein, starch, or fat, we might hope for a brilliant future for Canadian Cheddar, and a revolution in present-day diets.

Chemical analysis of this food shows it to be one of high nutritive value, being composed approximately of equal parts by weight of protein, fat, and water. It has nearly twice as much protein material, weight for weight, as average beef; and its fuel value is more than twice as great, owing to its very high percentage of fat. Cheese is also rich in valuable mineral matter, containing salts of lime, phosphorus, magnesium, and iron—all of which are essential for healthy body tissues and normal blood.

CHEESE AN ECONOMICAL FOOD.

The economic value of cheese is very high. One pound of cheese at eighteen cents is equal in fuel value to two and one quarter pounds of average beef. It is therefore a very cheap source of material for growth and repair as well as for animal fat;—facts which should establish the free use of cheese dishes to supply nitrogenous materials and fat, making it a food in every way comparable with meat, fat fish, and

eggs. The ease with which it can be kept prepared for the table, and the great variety of ways in which it can be served, should also make it a food peculiarly valuable to the housekeeper. Like meat, fish, and eggs, cheese should, when taken in quantity, be liberally supplemented with starchy food, e.g. bread, potatoes, crackers, rice, macaroni; and with succulent foods as non-starchy (or green) vegetables, or fruits; the latter supplying valuable cellulose and organic acids, which cheese lacks. A menu so arranged, whether for dinner or luncheon, constitutes not only a "well-balanced" meal, but should be as attractive and palatable as a meal with meat.

HOW TO MAKE CHEESE MORE DIGESTIBLE.

Granting that cheese is a food which ranks high in fuel and tissue-forming value, that its economic and dietary values are as so very high, we must confess that it is a food not easy of digestion, particularly when served as purchased. It is most dense and concentrated, and hence difficult of mechanical digestion. It is also so constructed that every little particle of protein is enclosed in a water-proof covering of fat, and when one realizes that the work of the stomach is to render more soluble the proteins in our food, and that its juices do not act chemically on fat, we conclude at once that cheese must leave the stomach much the same as it entered it, throwing upon the intestines the burden of digesting not only the fats of the cheese, but all the protein as well. Cheese, as cheese, is slow of both mechanical and chemical digestion. There is also present in cheese some free fatty acid produced by bacteria during the process of ripening, and its

presence causes uneasiness in the stomachs of some people.

Despite these facts it has been conclusively proved by careful experiment on the part of the best food authorities in the land that cheese can easily be rendered easy of digestion.

Its density may be overcome by thorough mastication, or by grinding or grating. Its concentration may be overcome by eating it along with other foods, preferably crackers, or bread not too fresh; or in combination with another food or foods, as in cheese and bread custard; or rice, cheese and tomato sauce. The tediousness in its digestion may be remedied by melting the cheese in a hot cream (or tomato) sauce, or other hot liquid, e.g. soup, adding it to the liquid when it is in a fine state of division, and stirring the liquid until, as is said, the cheese is "melted." The casein thus set free is at once attacked by the juices of the stomach and made ready for the intestines which begin their work of saponifying the fats.

The addition of a little baking soda to cheese dishes has the effect of neutralizing much of the acid present in the cheese.

CHILDREN AND CHEESE.

The practice not uncommon of giving lumps of cheese to young children is most unwise, and cannot help but cause digestive disturbances. It is too concentrated a food for a young child, to say nothing of the density of its structure. The child loves the flavor, and the result is hasty mastication. The stomach not being supplied with teeth finds the task almost impossible, and during the minutes and hours which follow Nature cries out in the form of prolonged "stomach ache."

Cheese when given to older children should not be new, and crackers or bread, which is not fresh, should be eaten along with it. In this way hasty mastication is impossible, for the dry starchy food demands water to soften it, and in this way the saliva is not only getting in its work upon the starch but the cheese is being divided finer and finer and its particles becoming separated with starch particles.

THE COOKING OF CHEESE.

Cheese dishes require to be cooked at a low temperature, as high heat hardens the protein in the cheese in the same way that egg white and all other proteins are hardened. Cheese dishes therefore should never be boiled, fried, cooked in a frying pan, or in an oven at a high temperature. Welsh rarebits which are cooked over the direct heat are most indigestible. Cheese should never be cooked in combination with pastry, for the starch in the flour demands high heat, and the cheese just requires enough to melt the fat. Either the digestibility of the starch, or that of the casein, must be sacrificed. High heat not only hardens the protein in cheese, but it overheats the fat, and the result is that fatty acids are set free which are irritating to the stomach.

Cheese dishes when cooked on top of a stove or over a flame should be prepared in a double boiler. When dry heat is used they should be baked as custards in a moderate oven, placing the dish in a larger vessel containing hot water. The water should come up on the dish as high as the contents, care being taken that the water at no time reaches the boiling point. Without these precautions it is almost impossible to make a success of a cheese dish. The presence of rubbery strings

of cheese in cheese dishes is a more or less familiar occurrence.

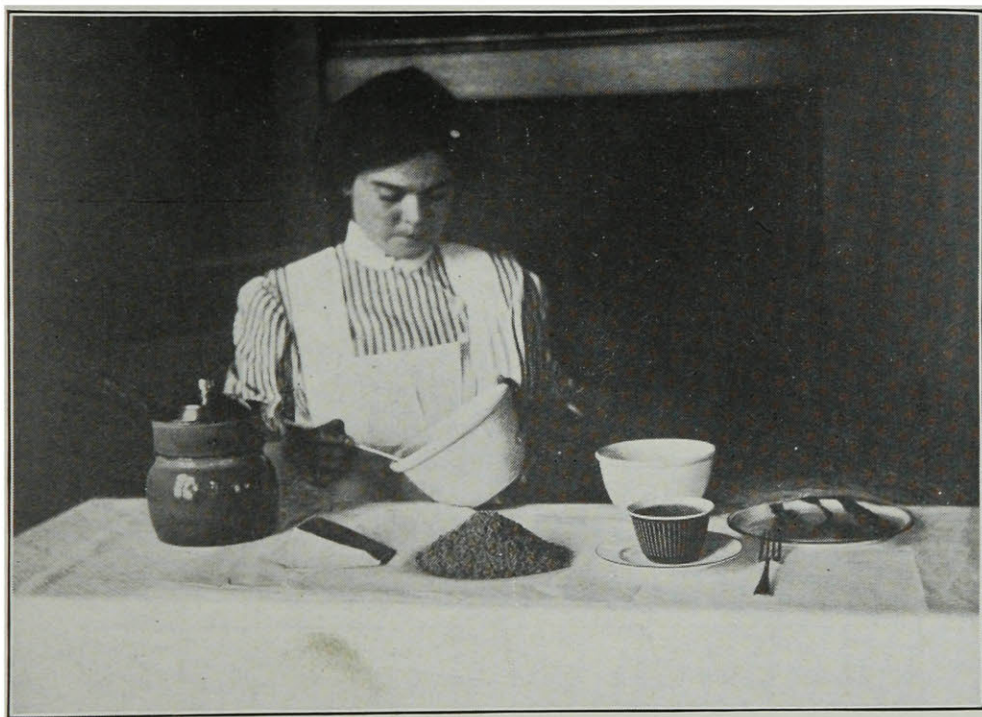
The practice of using much butter with cheese is not good, for cheese is already rich in fat. It demands what it lacks—starchy foods and cellulose-rich foods, the latter being supplied in the form of either non-starchy vegetables or fruits. This fact should never be forgotten in any menu in which cheese constitutes the substantial dish.

CHEESE RECIPES.

The following are recipes of cheese dishes which if properly cooked are

METHOD.

Mix to a smooth paste the flour with an equal quantity cold milk. Thin down with more milk until of pouring consistency. Add remaining scalded milk gradually, and then cook mixture until fully thickened. Add the butter and finely grated cheese, stirring the mixture over hot water until cheese is dissolved. Pour mixture gradually into the beaten egg yolks, stirring all the time. Cook over boiling water for two minutes. Remove from fire, season to taste, and cool somewhat. Beat egg whites stiffly and then add them to



Preparation of Cheese Soufflé. Showing the Increase of Volume when Cheese is Grated.

light, easy of digestion, very nutritious, cheap, and, last but not of least importance, "most palatable."

CHEESE SOUFFLE.

1 cup milk (16 tablespoons)
4 egg yolks.
3 tablespoons (even) flour,
4 egg whites,
2 tablespoons (even) butter,
Pinch of baking soda,
1 cup finely grated Canadian Cheddar,
Dash cayenne,
Salt and pepper to taste.

sauce mixture by careful cutting and folding. Pour into buttered baking dish, set in a pan of hot water and bake in a moderate oven until mixture is set. Test with a knife as for custards. 30 minutes is the usual time required.

CHEESE PUDDING.

1 cup cheese, finely grated,
2-3 cup buttered bread,
2 cups milk,
Pinch soda,
2 eggs,
Dash of cayenne,
Salt and pepper to taste.

METHOD.

Cube the buttered bread finely. Prepare the custard mixture and season it. Stir into it the cheese. Grease baking dish. Line it with the diced bread, and pour over it the liquid mixture. Let dish stand 15 or 20 minutes. Then place in a moderate oven in a pan of hot water until set.

CHEESE CUSTARD WITH POTATO BORDER.

1 cup milk,
2 tablespoons flour,
1 tablespoon butter,
2 tablespoons finely grated cheese,
1-8 teaspoon pepper.

custard. Re-heat in oven, and serve hot. Garnish with parsley.

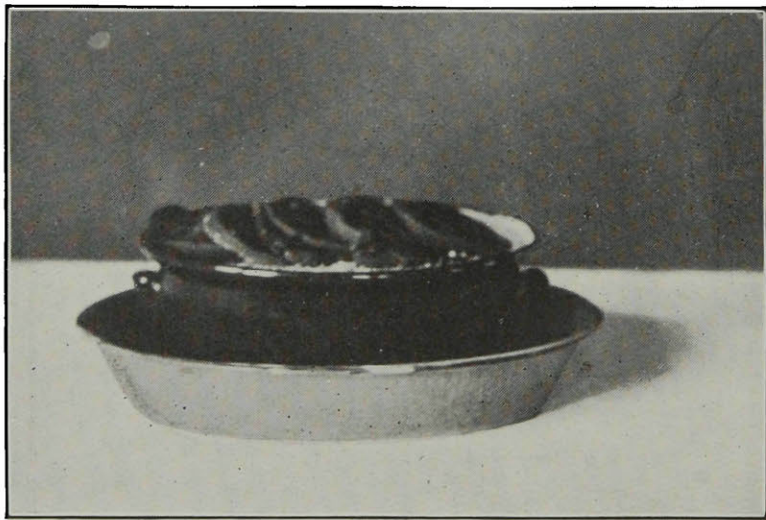
NOTE.—Suitable as the substantial dish at luncheon or supper. This same sauce may be poured around hot poached eggs before serving. One cup tomato juice may be substituted for the one cup milk.

MACARONI AND CHEESE.

1-2 cup macaroni,
1 cup white sauce,
1-2 cup grated cheese,
1 cup tomato sauce.

METHOD.

Cook macaroni until tender in 2 quarts of rapidly boiling salted water.



A Cheese Custard in a Pan of Hot Water ready to be Baked.

METHOD.

Make a sauce with the milk, flour, butter, salt, and pepper. Cook over hot water until no trace of the taste of raw starch can be detected. Then pour mixture gradually into slightly beaten egg. Return to double boiler and cook two minutes. Add cheese and stir until dissolved. Have ready hot mashed potatoes, well seasoned; whip hot milk into them until soft and very light. In a baking dish arrange a border of the potatoes making them as fluffy as possible. Pour in the centre the cheese

Drain, rinse with cold water. Re-heat in white or tomato sauce into which the finely grated cheese has been stirred until dissolved. Season to taste.

NOTE.—Serve as a substitute for meat and potatoes. Rice and cheese prepared by the same method is a delicious dish. If white or cream sauce is used the dish may be garnished with slices of ripe tomato.

RICE OR MACARONI AND CHEESE SCALLOP.

Prepare macaroni and cheese. Put mixture in a greased baking dish,

covering it well with fine dry buttered crumbs, using one tablespoon melted butter to one cup of crumbs. Place in oven long enough to turn crumbs golden. In this time mixture will be thoroughly heated.

NOTE.—Do not let mixture boil.

DUCHESS SOUP.

2 cups brown or white soup or stock,
3 tablespoons butter,
1 tablespoon chopped carrot,
3 tablespoons flour,
1 tablespoon chopped onion; 1 table-
spoon chopped celery,

1 cup milk,
1-4 cup grated cheese,
Salt and pepper.

METHOD.

Melt butter and vegetables chopped finely. Cook until butter slightly browns. Stir in flour and mix well. Then add gradually hot stock and stir until it thickens and boils. Strain, add milk and cheese. Reheat carefully on back of stove, stirring until cheese melts.

NOTE.—Suitable for dinners when the substantial course is lighter than usual.

A Voyage Across from South Africa to Canada.



SAILED from Cape Town on the 24th April on the T.S.S. "Demosthenes" bound for England. The morning we sailed was bright and sunny and as I saw the last of Table Mountain I only then realized how dear my country was to me.

The first few days were spent in getting used to the boat and generally getting acquainted with my fellow-passengers. As life gets monotonous on sea as well as on land, when spent in idleness, a sports' committee was formed, and several tournaments for deck golf, quoits and other games were commenced and these lasted nearly fourteen days. However when we got into the tropics all the sports were terminated as it got unbearably hot. The sea looked oily and leaden and not a breath of air was felt. This lasted nearly five days and we just lounged in our deck chairs and tried to keep cool. We crossed the Bar on the sixth day and after that the atmosphere

cooled considerably. On the thirteenth day of our voyage the first land was sighted. Several islands loomed upon the horizon, but these were all uninhabited. Hundreds of migratory birds usually alighted on the decks when we neared land, and it was our keenest pleasure to note the various kinds and also to give them food and water. Two days later we reached Teneriffe. We were not allowed off the boat as it was nearly midnight when we entered the harbor, but the Spanish hawkers got permission to bring their wares on board. In a few minutes the decks were transformed into a bazaar, and the loveliest mantillas, Spanish lace and the famous Teneriffe work were brought to view. We sailed again the next morning. Teneriffe seen from the boat looked like one huge mountain with the little town lying at its base. As we sailed by we passed ranges and ranges of mountains. No land was seen again until we sighted the dim outline of

the south coast of England. We were now in the Bay of Biscay. We arrived in Plymouth Harbor in the afternoon and most of the passengers were landed. The captain pointed out the fort to us which had been erected on the spot where Drake and Raleigh were playing bowls when the Spanish Armada came in sight. We left again the same afternoon. The next day we anchored at the mouth of the Thames and waited for the tide to carry us down the river. We arrived at the Albert Docks in London on the 16th May. We were all very sorry to leave the boat as we had had such a pleasant trip.

After a stay in London for a few days and seeing as much as I could of that wonderful metropolis, I again made preparations for the second part of my voyage.

We sailed from Liverpool on the R.M.S. "Virginian" on the 24th May. Oh, what a difference! Instead of blue sunny skies and calm seas we were tossed about and at the mercy of the grey Atlantic.

As we neared the icebergs the cold became intense. We passed several far too close to be at all comfortable, but they afforded us a magnificent sight.

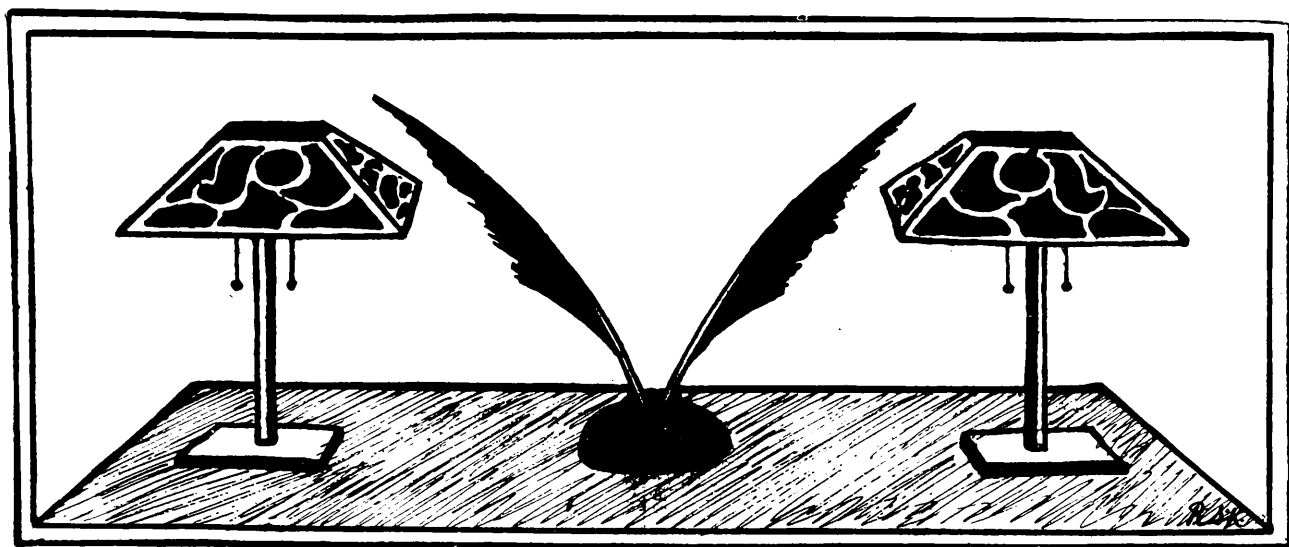
Sailing up the St. Lawrence was very interesting, passing quaint little villages which looked very picturesque in their setting of green trees. Fortunately, it was a warm sunny day and thus we were able to enjoy the lovely scenery thoroughly.

Our boat reached Quebec next morning, passing the historical Plains of Abraham and arriving in Montreal the same evening.

LILIAN DE VILLIERS.



A Group of Art Students.



Under the Desk Lamp.

THE AGRICULTURAL ALUMNI ASSOCIATION.



At the close of last session the members of Agriculture '11 and '12 organized an Alumni Association. The constitution and objects of the Association appear in the Alumni Section of this number. The formation of this Association is regarded by all as an excellent thing, both for the College and for the graduates. It will act as a connecting link between the Alumni and their Alma Mater, and through it the former will be able to keep in touch with the work and progress of the College and thus retain their interest in her welfare. The Association will also tend to keep alive the *camaraderie* and good fellowship which is so characteristic a feature of the relationship existing between the students.

It will be observed that lack of space does not allow us to give any personal accounts of the graduates in Agriculture in this issue, but their many friends may be assured that we shall make up for this in the next.

THE COVER.

We should like to draw attention to the new cover which is used for the first time in this number. Our readers will doubtless remember that last spring we offered a prize of five dollars for the best cover design sent us. In response to this offer we received several designs which were all so excellent that we regret very much our inability to use them all. One of the professors very kindly consented to judge the designs and decided that the one executed by Mr. Ernest Rhoades was deserving of premier place. Mr. Rhoades' many friends who are acquainted with his excellent and artistic work, will, we are sure, agree that this is in every way worthy of him.

FIELD DAY.

When this number comes out Field Day will be a thing of the past, and some of our readers will doubtless be surprised that there is no mention of the day's results in the "Athletics" columns. For the benefit of such we must explain that this magazine went to press before the eighteenth of Octo-

ber, the day appointed for the athletic meet. In our next, however, there will be a full account of the day, with pictures of the winning teams.

The races this year will be run on the girls' campus, as they were last year, but the jumps will come off on the men's campus. The hop, step and jump is a new event added to the list for Field Day.

We are pleased to say that through the generosity of Dr. Harrison, the men's campus is being surveyed for the laying down of a permanent cinder track. This track will not be ready for Field Day but we hope to have it completed next fall. We are also having a permanent jumping pit dug on the men's campus. These have hitherto been two pressing needs and all interested will be pleased to hear that they are being supplied.

THE CORRESPONDENCE COLUMN.

For the benefit of new students and others to whom the information may be useful, we wish to state that we are prepared to publish correspondence on any current topic of interest to the student body. The magazine is the official organ of the student body, and one of its main objects is to afford the students an opportunity to make public any views or opinions concerning College affairs which they desire to, and therefore we should be pleased to have them use its columns for this purpose. Letters may be signed with the writer's name or with a pseudonym, but in the latter case the name of the writer must be sent to the Editors. The Editors reserve the right of publishing or suppressing any letters received, but

will take no responsibility for any opinions therein expressed.

THE NEW STUDENTS.

We are pleased to see that there is a considerable increase in number in this year's Freshman Class as compared with last year's. It takes a long time to educate a people, but even so conservative a class as the farmers are is beginning to realize how immense are the advantages offered their sons at a college such as Macdonald; and we feel assured that it will not be long before the College will be obliged to increase its residential accommodation.

In the School of Household Science there are sixty-nine students registered of whom twenty-four are taking the Short Course. This latter course seems to be extremely popular as the number of applicants was so large that many had to be refused.

There is in the School for Teachers a larger number this year than we have had previously. One hundred and seventy-five students registered on opening day. This is very gratifying as it seems to indicate that before long all the schools of the province will be filled with trained and competent teachers. Unfortunately, there are no male teachers in training this year, in spite of the fact that the Province is realizing that the need for male teachers is one which should, if possible, be speedily supplied.

EXCHANGES.

We wish to acknowledge with thanks the following:—

Cornell Countryman, Illinois Agriculturist, O. A. C. Review, The Alumnus, The Academy Bulletin.

Impressions of Macdonald College.

Impression No. 1.



THE long anticipated day has come!' was the thought that went through my mind as we, the excited girls in the train, first caught a glimpse of the many red buildings of Macdonald College. When the brakeman called out in prolonged tones "Ste. Annes," what confusion there was! Every girl sprang for her baggage, and the quick and slow alike seemed to be whirled from the car to the platform where standing room was hardly available. I seemed utterly helpless—and my first impulse was to follow the crowd and to secure a place in one of the "Ste. Annes Taxis." I thought myself very fortunate when one of the drivers came forward and seized my suit case, but while endeavoring to follow him I was swayed by the crowd in the opposite direction and in a few moments was being driven away in a crowded cab, wondering if I should ever see that suit case again. But hardly had I started to think seriously, when the cab came to a standstill at the large entrance of what some of the girls called the Main Building. Here, again, I was hurried out to another fate, which though not as confusing as the first, was much more embarrassing. After the cabby had driven away, the girls who had occupied the same cab with me bustled noisily into the large building. They were, apparently, acquainted with one another as they talked and joked among themselves as they wandered about the long halls before registration. Of course, I didn't wish to follow without invitation

and I was left absolutely alone. Finally, after asking advice of every girl I met, I found my way to the registration room. That room, too, was crowded, and as I leaned against the wall, awaiting my turn, I gazed out across a green campus stretching to stately trees near the river. It was a beautiful sight, but I felt too miserable to appreciate it, as again that gnawing pang of anxiety thrilled me—"Where is my suit case?"

Impression No. 2.

The Opening Day has passed well on toward evening. Registration is accomplished and rooms have been assigned. One thing yet of the three fundamentals—work, sleep and eat—is uppermost in the minds of all. Our mothers, all, bless them, have been anxious lest we should suffer physically, dietetically, in our hard study—and we, too, in our earnestness, are nervous lest there be too little nourishment for the arduous brain work of the months to come.

Then a great bell rings up the long halls and a general movement accepts it as the call to dinner. Thank goodness, we don't have to go in alone! There is a girl we talked to in the room where we registered, and she smiles as we approach.

We go in together and hesitatingly sit down. Some others also sit, but finally, we agree that those who look to have been here before are standing, and we get up too. A sudden hush of the babel of tongues—a bell rings—a harmonium sounds, we sing—then a

scraping of chairs being withdrawn and we are awaiting dinner.

The noise increases; everybody talks at once; those who feel most like crying laugh the loudest, except a little white-faced girl at the corner of the next table. She has red, swollen rings around her eyes, little appetite and no desire to talk.

A few men come in and occupy the tables near the doors we entered. Some, apparently teachers, occupy tables at the far end of the room. These come in rapidly and importantly and eating slowly are left behind.

The first meal is over. What a number of girls and so few men!

Impression No. 3.

At last the train pulled into Ste. Annes and I needed no guide to get to the College. The first thing that impressed me was the beautiful site on which the College is built, and the relief to the eye after leaving the city. Nicely laid out shrubbery dotted the campus green, which gradually slopes down to the river's edge.

Registration and the assigning of a room were quickly accomplished. Then came a period of anxious thinking of what I should do with myself, which was interrupted by one of the students offering to show me round the College. What spacious halls and lecture rooms, beautifully fitted up as to every detail of heat, light and sound. These were not only in the Physics Building. We then went around the Animal Hus-

bandry Department, and I was indeed surprised to see how very clean everything was kept—here I am including the stables and piggery. It was all so different from what I had seen on farms, for my friend had explained to me that there was nothing practised at the College but what might also be carried out on the farm.

We then hurried back to the dining hall, where I was quite bewildered by the number of girls who had already assembled there for their meal; and yet there were more coming in. All of them were smiling (I did not say, talking) and seemed to be looking at me. As I am very shy, I retired behind a pillar in the corner.

Dinner over, my friend introduced me to most of the other students and we managed to "kill time", chiefly with the aid of music and songs, until a reasonable hour of the night, when I went to bed.

It was around midnight, that I had a dream. I dreamt that I was flying. I was interrupted in this, however, by a yell and also by the floor—my bed had been "dumped." Before I could gather up my scattered wits and bed clothes, I was blind-folded and taken out to be "initiated"; even this, however, came to an end and I was then recognised by the rest of the students as a student of "Macdonald College." Strangers can recognise me as such by noting the absence of hair on the back of my head.



SUMMER AT THE COLLEGE.

Copy of some shorthand notes taken by an unseen stenographer of a conversation between one of the lucky fellows who stayed at the College for the five months' vacation and one of his class mates just back.

"Hello, Bill! So awfully glad to see you again. Have you had a good summer?"

"Yes, rather, first rate, except for the horrible weather during the last few months, which will cause a decided diminution in my pocket money this year, I am afraid; but how about your good self?"

"Oh! we all have had the time of our young lives—but, come into the room and sit down and I'll tell you about it."

"Delighted, old man."

"All of us in the first and second years were lucky enough (ahem) yes, lucky enough to join our respective departments before the backbone of the seeding operations had been broken, so our chiefs decided that ours should be broken and, incidentally, the other as well. This kept us busy until it

was found necessary to care for the dear little seedlings by separating some who forgot that no clinching in the ring—soil, I mean—was allowed, and others whose backs had to be stroked with a harrow to impress upon them the important fact that they had to grow and were not there for the sake of a change of climate, although, perhaps, some of them had had a bad voyage from Sweden.

"By July everything was looking splendid and the intensely hot week that we had just about that time did not seem to have much effect on anything except our complexions, which, to say the least of it, were becoming coppery."

"But," said Bill, "do you mean to say that you had such a good time just working?"

"Now, don't be nasty. Of course, we loved our work, but, oh, you French and Art Courses!! These two delightful bunches of girls came to gladden our souls after the many sad partings from our friends of last session. Why, man alive, would you believe it, we had five dances in one week during their short stay; canoe trips at night

on the river also formed by no means a small part of the fun—they were such a jolly lot."

(Conversation outside—"Now, by golly, as nearly as I can remember, this new development transpired through the—)

"Oh, hello, Mac, come in, here's Bill. I was just telling him of our summer experiences."

"Greetings, Bill, comment ca va?"

"Oh, so you, too, were interested in French this vac., eh? I have just been hearing about this classy bunch."

has been the great courtesy shown to us by our respective chiefs. This has at all times made the work very congenial for us, although at times somewhat hard.

"But, you haven't been to the Dining Hall yet, have you Bill? You wait. There is a sight there awaiting you in our new array of girls. Just think of us, few as we were, having to face them all. Even Jimmy succumbed after a few days and had to find solitude in a farm to rest his nerves after the strenuous experience. On the other hand,



Prof. Klinck and his Student Summer Workers.

"Well, Bill, to finish up our story, the harvest started in most encouragingly; the fruit from the Horticultural Department being particularly encouraging, due to the enormous quantities we consumed both at table and the ones 'given' to us in the orchards, until this deluge of rains came, but why mention a subject which evidently pains you.

"By no means a small factor in the extreme enjoyment of our work here

Marconi's love waves have been vibrating through the ethereal medium with the letters C-O-R-N—L, and the station at that city in Ontario must have been wondering what people were making love by wireless and using their station-call."

"Must you really go, Bill? Well, take an old friend's advice and if you want to have a real good time try our old Alma Mater for a summer."

F. L. D. '14.

THE GIRLS' LITERARY SOCIETIES.

The School for Teachers has, this year, organized a literary society for the whole school. The officers are as follows:—President, Miss K. Porter; Secretary, Miss P. Wyatt; Treasurer, Miss H. Armitage; Executive, Miss M. Collins, Miss M. Marshall.

Besides this one society, each of the five sections in the School for Teachers has organized a literary society of its own. Each of these societies is to meet twice a month by itself, besides attending the one meeting per month of the general Literary Society of the School for Teachers.

It is the purpose of the societies to have debates, story-telling contests, impromptu speeches, recitations, musical items, etc., at the different meetings. As yet, no exact plans have been laid out for the meetings, but these will be decided later.

PANSY N. WYATT,
Secretary.

SECTION "A" LITERARY SOCIETY.

President... Miss Marguerite Goodchild
Vice-Pres... Miss Adela Gilker
Secretary... Edith Bothwell
Committee { Miss Bessie Reichling
 { Miss Eleine Millward
 { Miss Elsie Seveigny

**OFFICERS OF LITERARY SOCIETY,
MODEL "B."**

President... Miss Beatrice Clark
Vice-Pres... Miss Dorothy Slack
Secretary... Miss Violet F. Joss.
Committee { Miss Miriam Buzzell.
 { Miss Margaret Banks.
 { Marjorie Palmer.

It is our purpose to have each member of our section give an impromptu speech, a recitation or a reading, in order to develop confidence and ease when speak-

ing in public; or, if preferred, an instrumental or vocal selection may be rendered.

VIOLET F. JOSS,
Secretary.

MODEL "C" LITERARY SOCIETY.

The officers of Model C Literary Society are as follows:—

President... Miss Katie Windsor
Secretary... Miss Alice Pratt.
Committee { Miss Helen Reid.
 { Miss Elsie Biggar.
 { Miss Dorothy Buzzell.

The work planned for the present term will consist largely of impromptu speeches in which each girl will have an opportunity of taking part. Occasional musical entertainments will also be given.

ALICE M. PRATT,
Secretary.

SECTION "D" LITERARY SOCIETY.

President. . Miss C. M. Armatage.
Secretary. . Miss M. C. Collins.
Committee { Miss Carter.
 { Miss I. Lemesurier.
 { Miss D. Dunn.

SECTION "E" LITERARY SOCIETY.

Section E met on September 23rd, 1912, to elect its officers, which are the following:—

President... Miss Amy Moore.
Secretary . . Miss Olive Tait.
Committee { Miss M. Marshall.
 { Miss M. Pentlebury.
 { Miss B. Pomfret.

It was decided that impromptu speeches would be given by each member throughout the term.

V. OLIVE TAIT,
Secretary.

THE TEACHERS' INITIATION.

Many are the ways of introducing the Freshies to the sacred rite of Initiation, and many are the devices resorted to; but never before did Nature with her weapons of thunder and lightning lend such valuable assistance as on the memorable night of our initiation.

In accordance with the instructions on the Bulletin Board, we were drinking in the inspiring words of Prof. Lochhead, when suddenly the martial tread of many feet was heard and midst blood-curdling shrieks and peals of thunder a host of spectral figures took possession of the platform and deposed the startled orator.

Then ghastly preparations for the coming ordeal took place. Black-robed figures stalked amongst us and selected their unfortunate victims, who, not daring to resist their imperative summons, were led to a cauldron over which a monstrous apparition presided. Our arms and faces were besmeared with the salty fluid from this cauldron and half-choking with rage and brine we were compelled on our trembling knees to sign a script dedicating our very souls to the Seniors.

Midst lurid lightning flashes and the wailings of the Dead March, we were next thrust into the torture chamber where fresh horrors awaited us. From this gloomy place whose black shadows were haunted by our tormentors, we stumbled down a flight of tortuous winding stairs. At each turn we were accosted by a spectre, who alluded in scathing terms to our freshness. The only apparent sign of friendliness was an outstretched hand which, on closer acquaintance, brought us rudely to our senses, for its slimy grip left anything but a friendly impression. Further on our outraged feelings were again incensed with a dose of mustard and still struggling in the clutches of this latest infliction we were ushered into a realm of pleasure.

Then, two by two, we made our way to the gym, where some of our number entertained the onlookers with curious performances, among which the imitation of a cat-fight and several nursery rhymes were the chief attractions.

However, under the melting influence of ice-cream and fairy wafers, all lacerated feelings were healed and from the hearts of the refreshed Freshies rose three cheers for the Seniors.

THE FRESHMAN INITIATION.

On Monday night, the thirtieth of September, the Sophomore class tendered a reception of greeting to the incoming Freshmen. Late in the evening the Sophomores gathered and entering the rooms of some five or six Freshmen, delivered personally their address of welcome and their invitation to an informal entertainment in the gymnasium.

So eager were the Sophomores to meet the new members of their College that by the time the Freshmen were sufficiently awake to take note of the proceedings or tender their regrets, they found themselves, in almost every instance, completely overwhelmed by the exuberance of joy manifested by their hosts, to say nothing of sundry articles such as springs, pillows, blankets and mattresses.

Towels were produced and the Freshmen blindfolded. In this condition the Freshmen were conducted into the hall, there meeting others who had also been invited to attend the reception. Guided by upper class men, who were extremely careful to point out the many pitfalls, crevasses, and dangerous places where a false step would mean destruction, the Freshmen finally reached the gymnasium. Here each newcomer was requested to introduce himself, which he did, and was further asked to recite a

poem, sing a solo, or make a speech. This request was made under pain of immediate extinction if we failed to comply.

A long list of rules and regulations covering Freshman conduct and mainly concerned with "fussing" was next read, and each member of the class of 1916 was respectfully requested to sign his name, to the effect that he would keep and religiously comply with the same.

The next number on the programme was a race. Four or five small cartridges were placed upon the floor at distances of a few feet. The Freshmen were then urged to kneel and push these cartridges along the floor using their noses as a means of propulsion. This race was highly amusing,—to the on-lookers,—and considerable excitement occurred at the finish. This race over, the crowning event of the evening, both literally and figuratively, took place when an experienced tonsorial artist removed a lock, or several locks, of hair from the head of each newcomer. The programme then ended with a ducking in the tank.

As soon as the first five or six Freshmen had been welcomed and ducked another set of five or six were invited to attend. As they had no other engagements they all came. In this way the Sophomore class, despite their small numbers, impressed upon us the fact that, we, individually and collectively, had been made members of Macdonald College.

C. R. '16.

THE JUNIOR SCIENCE INITIATION.

"What is it?" "What is it?" each girl asked her companion as she too rushed towards the centre of interest "The Bulletin." Here was the ex-

planation. In large clear type it was printed:—

HALT! YE JUNIOR SCIENCE AND GIVE
HEED TO THESE WORDS OF WARNING
RETIRE YE TO YOUR BEDCHAMBER AND
COVER YOUR GARMENTS OF FRIVOLITY
WITH YOUR RAIMENTS OF REPOSE
(NIGHTGOWNS).

AT THE HOUR OF EIGHT ASSEMBLE YE
YOURSELVES TOGETHER IN "THE
ALCOVE" WITHOUT THE DINING HALL
AND THERE *in silence* AWAIT YOUR
DOOM.

Some of us looked frightened, others looked joyful, but the expression on most of our faces was a mixture of fearful and joyous expectancy.

At the hour of eight sharp—for once no one dared be late—we were gathered in the alcove waiting our individual summons "Come hither."

One by one we entered that room of terror—were blindfolded and our hands securely bound. A ghostly figure then appeared and grasping us led us down a long and winding stair. We had faint hopes of at least firm footing on the bottom, but alas! mighty mountains and yawning chasms grew up before us, and dreadful hollow voices and the roaring of mighty oceans resounded in our ears.

On and on we were led till we came to a more dark and fearsome corner still. A weird, awe-inspiring figure appeared and in sepulchral tones our undying love and obedience demanded and exacted. Then a nauseating briny dose of boiled macaroni soaked in salt was forced into our unwilling mouths—an antidote for any remaining freshness it was said.

Finally, we were led up and up the winding stair, and, still blind and helpless, turned into the dark gymnasium hall.

The black-masked seniors clad in ghostly robes and flaming caps soon came gliding in and brought us light. Then, perhaps, the best fun of the evening began. We certainly gave a first-class vaudeville entertainment.

The first number on the programme was a walk around the gymnasium during which, by gentle request, we removed all hair pins, combs, "head-ache bands," and other superfluous things we happened to have in or on our hair. After that by ones, twos or threes we mounted the platform and

Ideal weather prevailed and each member of the class looked after the "Ideal Company," brought about by natural selection and environment, two great laws supposed to have been only lately discovered—we mean by Class '12 within the last twelve months. Feminine graces accordingly accompanied them on their trip to Rigaud, which proved a huge success. The evening was spent in hilarity. Everybody elegantly kicked their heels in the air till sundown or rather moondown.

All frivolity, not to speak of all



Class '12 Picnic.

gave exhibitions of reading, dancing, whistling, nose-racing, etc.

Ice-cream and cake were served, then with a warm feeling in every heart for every senior, we gave three hearty cheers and said "Good-night."

H. E. M.

CLASS '12.

Au Revoir but not from Memory.

After the heavy strain of exams and the additional strain of an evening dinner, the portly body of Class '12 prepared itself for an afternoon picnic.

College courses must come to an end. It is always left to us however to crown the end with magnanimity or do otherwise. Class '12 knew better than to choose the alternative. They got their degrees of B.S.A. conferred upon them in McGill, returned to the College and in the evening, Robt. Newton, their class President, read an excellent valedictory; Malcolm Davis, in systematic fashion, gave the class history, and R. S. Kennedy, in his own humorous way, gave the class prophecy. The Student body to Class '12 send greetings.

PERSONNEL OF THE MACDONALD COLLEGE STUDENTS' COUNCIL, 1912-13.

President.—Wm. Gibson, Pres. Senior Year Agriculture.

Secretary.—E. M. Ricker, Pres. Sophomore Year Agriculture.

G. Muir, Pres. Junior Year Agriculture.

E. T. Mitchell, Pres. pro tem. Freshman Year Agriculture.

Miss E. Ayre, Pres. Senior Year Science.

J. K. King, Pres. Men's Athletic Association

Miss B. Reichling, Pres. pro tem. Girls' Athletic Association.

J. S. Dash, Editor of the Magazine.

A. C. Gorham, President of M. C. L. & D. Society.

W. Ford, Pres. Y. M. C. A.

MEN'S RESIDENCE COMMITTEE.

As men in residence we enjoy self-government which is of a democratic



STUDENTS' COUNCIL.

Left to Right—Front Row—Gorham, Mitchell. Middle Row—Ricker, Richardson, Mrs. Crowell, Gibson (President), Miss Ayre, Miss Mills, Dash. Back Row—Ford, Miss Reichling, King, Miss Roy, Muir, Miss de Villiers.

Miss L. de Villiers, Pres. Junior Year Science.

Miss M. Mills, Pres. Senior Year Teachers.

Miss E. Roy, Pres. Junior Year Teachers.

B. Richardson, Chairman Men's Residence Committee.

Mrs. E. R. Crowell, Pres. Women's Court of Honour.

nature, those responsible being elected, some for a term, others monthly. It is a good training, and, moreover, works well. We are fortunate in having Mr. B. Richardson as Chairman, and also fortunate in our Advisory Committee which consists of Mr. R. Summerby, Mr. Clement and Mr. W. Reid.

Don't whisper during study hours unless you are bankrupt.

THE Y. M. C. A. RECEPTION.

This annual reception, the first of its kind this year, was held as usual in the men's gymnasium on Saturday evening, Oct. 5th. The work of the Y. M. C. A. as a Christian Endeavour Society is much appreciated. Its distinct aim on this occasion was to introduce its members to people of spotless character in spotless robes, at least they appear to be such because fellow feeling makes us wondrous kind.

Well, the girls left us last June and new ones came in September, and the verdict of the Y. M. C. A. would appear to be this: "That there are as many good fish in the sea as ever went out of it," and that is saying a good deal for them. They in many respects resemble girls of previous years in that they like fun and, be it known, "talk just as much." That is also saying a good deal.

The usual programme on an occasion like this is of course one given up to games of frivolity. Conditions were so tempting that many of the men were noticed to fall victims in the snare.

We all joined in the refrain of refreshments, and to tell you briefly the absolute success of the reception, I have only to state that we felt as if we had known everyone for fifty years, as indicated in the fact that we held hands and sang "For Auld Lang Syne."

Y. M. C. A.

With the following men in office the Y. M. C. A. may look forward to a good season's work.

President.—Wm. Ford.

Vice-President.—B. T. Reed.

Sec. Treasurer.—E. M. Duporte.

Committee.—A. E. Raymond, H. M. Fiske, E. M. Ricker, E. MacOuat, C. Fraser.

Musical Leader.—H. Williamson.

CLASS ORGANIZATIONS IN THE FACULTY OF AGRICULTURE.**Senior Year.**

Class '13 before leaving College last Spring elected their officers for the year 1912-13.

The following were the appointments made:—

Honorary President.—Professor Wm. Lochhead.

Honorary Vice-President.—Dr. C. J. Lynde.

President.—Wm. Gibson.

Vice-President.—J. S. Dash.

Secretary.—A. E. Raymond.

Treasurer.—J. K. King.

Committeeman.—A. C. Gorham.

LITERARY SOCIETY.

Honorary President—Dr. MacFarlane.

President.—D. E. Lothian.

Vice-President.—K. MacBean.

Secretary.—F. N. Savoie.

Treasurer.—V. Matthews.

Committeeman.—M. Jenkins.

CLASS '14.

Election of officers took place on the 15th October. Many members of this class have not returned to College, but those who have look forward to a successful season. They have welcomed several men from Truro, N.S.

The following is a list of officers:—

Honorary President. — Professor Klinck.

Honorary Vice-President. — Miss Fisher.

President.—G. W. Muir.

Vice-President.—J. R. MacFarlane.

Secretary.—B. T. Reed.

Treasurer.—C. J. Wilcox.

Committeeman.—H. J. M. Fiske.

LITERARY SOCIETY.

Hon. President.—Dr. MacFarlane.
 Hon. Vice.-Pres.—Prof. Lochhead.
 President.—B. T. Reed.
 Vice-President.—F. L. Drayton.
 Secretary.—O. Schafheithin.
 Treasurer.—R. E. Husk.
 Committeeman.—H. J. M. Fiske.

CLASS '15.

This class, the Sophomore Year, has chosen the following to look after its interests during the season now commenced:—

Hon. President.—Prof. Klinck.
 Hon. Vice-President.—Miss Price.
 President.—E. M. Ricker.
 Vice-President.—R. G. Grisdale.
 Sec.-Treasurer.—H. T. Evans.
 Committeemen.— $\left\{ \begin{array}{l} \text{A. G. Taylor,} \\ \text{W. Sutton.} \end{array} \right.$

LITERARY SOCIETY.

Hon. President.—Dr. MacFarlane.
 Hon. Vice-Pres.—Prof. Barton.
 President.—L. T. Westbrook.
 Vice-President.—H. Williamson.
 Secretary.-Treasurer.—S. Boyce.
 Commiteemen.— $\left\{ \begin{array}{l} \text{C. E. Walker,} \\ \text{H. R. Bailly.} \end{array} \right.$

ST. GEORGE'S CHOIR SOCIAL.

On Friday evening, Oct. 11th, a very happy party, about forty in number—composed of the present members of the Choir and a few friends—met at the home of the Rev. C. F. Lancaster, on Maple Avenue.

It was indeed a "Social," with every minute taken up in either games, dancing or listening to the humorous songs given by Mr. Chas. Stephen. Refreshments were served during the evening, and the success of this part of the program due to the efforts of the Misses Brown, Mills, Travers and Gorham called forth the thanks and appreciation of the host and all present.

Mr. Stephen moved a very hearty vote of thanks to Mr. Lancaster for his kindness in entertaining the Choir, which was carried with musical honors and cheers.

The singing of "Auld Lang Syne" and "God Save the King" brought to a close a most enjoyable evening.

E. R.

EVENING.

From upland slopes I see the cows file by,
 Lowing, great chested, down the homeward trail,
 By dusking fields and meadows shining pale,
 With moon-tipped dandelions. Flickering high,
 A peevish night hawk in the western sky
 Beats up into the lucent solitudes,
 Or drops with griding wing. The stilly woods
 Grow dark and deep and gloom mysteriously,
 Cool night wings creep, and whisper in mine ear,
 The homely cricket gossips at my feet;
 From far-off pools and wastes of reeds I hear,
 Clear and soft-piped, the chanting frogs break sweet
 In full Pandean chorus. One by one
 Shine out the stars, and the great night comes on.

—Archibald Lampman.

Faculty Items.



DURING the summer months several important changes have taken place in the College Staff. Mr. W. S. Blair, Professor of Horticulture, who has been connected with the College since its beginning, resigned to take charge of the Experimental Fruit Station recently established by the Dominion Government at Kentville, N. S. His successor has not yet been appointed. Mr. E. M. Straight, B. S. A., Lecturer in Horticulture, whose resignation took effect on October First, has been succeeded by Mr. F. M. Clement, B. S. A. In this Department a new position, that of Assistant, has been created, and Mr. W. M. Aikenhead, B. S. A., has received the appointment. Mr. F. W. Bates, B. A., M. Sc., who has for the past four years been Assistant in Physics, resigned in early spring to accept the appointment of Professor and Head of the Department of Physics in the newly-established Methodist College at Regina, Saskatchewan. Dr. D. W. Hamilton of the New Brunswick Normal School succeeds him. In the Department of Bacteriology, Mr. W. Sadler of the Midland Agricultural and Dairy College, Kingston, Derbyshire, succeeds Mr. H. Dasen who resigned to take up farming in the Eastern Townships. In the

Animal Husbandry Department, the resignation of Mr. W. J. Reid, B. S. A., Assistant in Animal Husbandry, has been accepted. Mr. Reid has been appointed Provincial Live Stock Instructor for Prince Edward Island and enters upon his new duties early in January. The position of assistant which has been created in this department has been filled by the appointment of Mr. A. R. Ness, B. S. A., a member of the second graduating class in Agriculture in Macdonald College. Mr. W. Gibson of the class of 1913, who has had charge of the College farm for the past summer under Professor Barton, has resigned in order to complete his college course this year. Miss Mabel Loveridge, Instructor in Domestic Art in the School of Household Science, resigned at the close of the spring term on account of her approaching marriage. Miss Alice M. Zollman succeeds her. Miss Isabella M. Hall, Assistant Housekeeper has been succeeded by Miss Laura I. Macfarlane. Mrs. Jennie Muldrew, who from the opening of the Institution has been House Mother in the Girls' Residence, resigned during the summer to become Lady Principal in the new Presbyterian Ladies' College at Red Deer, Alberta. Mrs. Muldrew has been succeeded by Miss Elizabeth Price. L. S. K.

NATURE.

Nature, the terrible, cruel, deaf, malign !
 So men have named her in their vague alarm,
 Who know her outward only. Never harm
 Came to the soul that read her secret sign,
 Lived her pure laws, and dreamed her dream benign,
 That broodeth eternal ever kind and warm ;
 With rare imagination's secret charm,
 Where all her lores and kindred loves entwine.—*Ex.*

OBITUARY,

On Thursday noon, October 10, the men students in residence were confronted with one of the saddest events in the history of the College. Mr. Charles McClary of the second year Agriculture had passed away.

McClary was taken to the hospital on Wednesday afternoon, suffering from the result of his being struck on the leg with a baseball the previous Saturday. On Thursday morning the doctors pronounced his case a very precarious one, for congestion of the blood vessels had set in, and at noon he died. The body was removed the same afternoon, his fellow students accompanying it to the G. T. R. station.

Deceased lived at Hillhurst, Que., and was the son of Mr. and Mrs. J. A. McClary of that place. He was a bright, energetic youth, and had reached his nineteenth year. Last year he figured prominently on his year baseball team.

The student body wishes to extend to the bereaved parents every sympathy in this their sad loss.

Class Presidents of Women's Residence.



WITH the greatest pleasure did the members of the Senior Science Class welcome back Miss Emma Ayre, who spent the summer traveling in the old country. Having so successfully graced the position of Class President last year, she was unanimously re-elected on her return.

Born in St. John's, Newfoundland, she was educated at the Methodist College there and afterwards at Beachy College, Eastbourne, England.

Fortunate, indeed, was Macdonald in securing one in whom are combined a vivacious and charming manner, sound judgment, and marked capability along the practical lines of her chosen profession.

Her Alma Mater will be proud to send forth as a graduate Miss Ayre, who so ably represents each phase of college life.

In their choice of Miss Mabel Mills as Class President the Model Class is particularly happy. Born at East Angus, Que., she received her education at the Angus Model School previous to her flight to Macdonald College where she took her Elementary Diploma in 1910. After teaching for two years in her native town, she found the fascination to get back again at Macdonald too great to overcome, thus her Alma Mater has claimed her for another year, where her extremely amiable, tactful and ever-pleasant disposition has succeeded in making her class mates love and respect her. We wish her every success and

many enjoyable days at Macdonald, and we are all sure the Model Class have chosen their President wisely and well.

The Homemakers are particularly fortunate in their choice of Miss Lilian de Villiers as Class President. Born at Roodeport, Transvaal, South Africa, and educated at the Eunice High School, Bloemfontein, Orange Free State, she comes to us from a far country, and one and all, we bid her a most hearty welcome, hoping she may enjoy her year spent in Canada, as well as her work at Macdonald College. Already, she has won all hearts by her sweet and charming manner, and we feel confident that, in our choice of President, we have done both wisely and well.

The Elementary Class, which is over-abundant this year, have wisely chosen Miss Ethel Roy as their President. Born at Sabrevois, Que., she was first educated at the Model School in East Angus and later at the High School in Neola, Iowa, until three years ago, when she went to Feller Institute, Grand Ligne, for two years. During this time she had three trips to the highly distinguished Gaspé Coast, whence come so many well-known students.

Miss Roy is of a quiet, unselfish disposition and possessed of good judgment beyond her years. We all wish her every success and happiness in her elevated position as President of the Elementary Class.



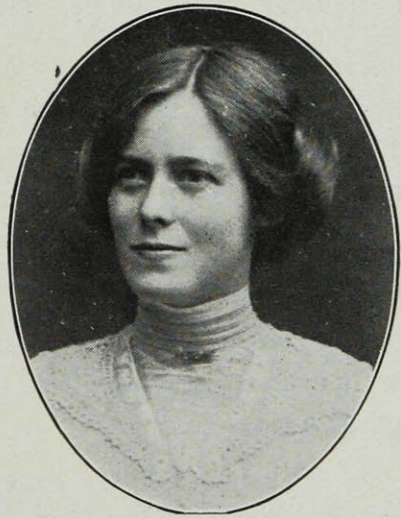
Miss M. Mills



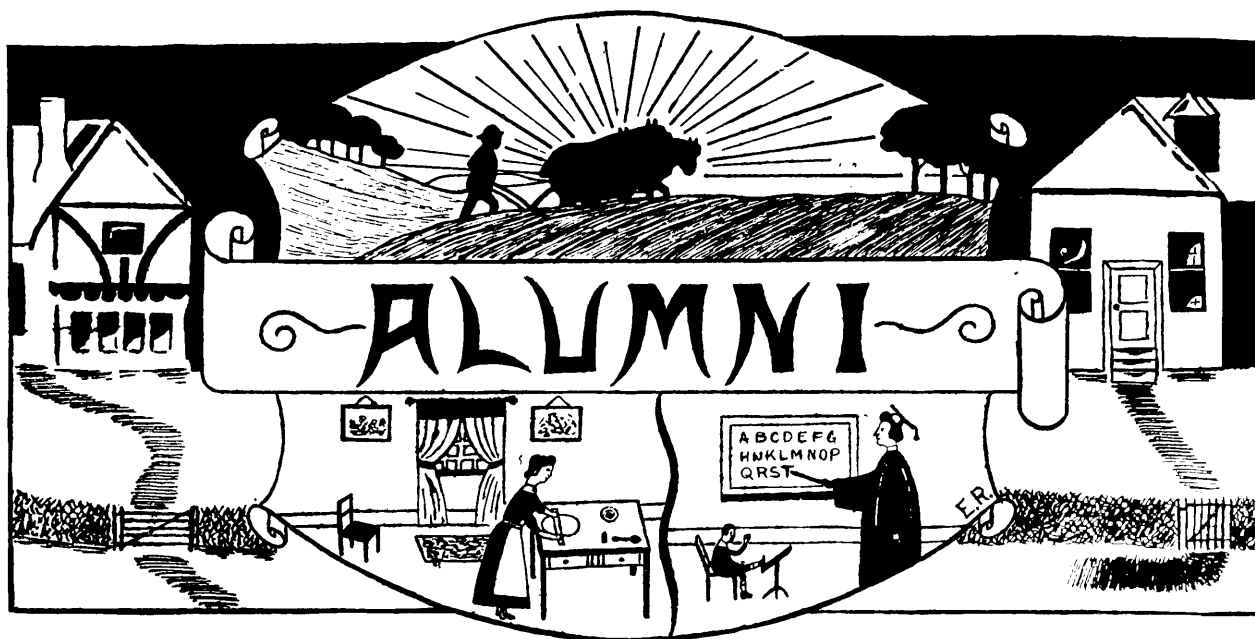
Miss E. Ayre



Miss E. Roy



Miss L. de Villiers



HOUSEHOLD SCIENCE.

It is with no little pleasure that we learn of the prominent positions held by the graduates of class '12, among whom are: Winnifred Baker, '12, who has charge of the work in domestic science at Edgehill Ladies' College, Windsor, N.S.

Frederica E. Campbell, '12, is the instructor in domestic science and supervisor of the residence at Alberta Ladies' College, Red Deer, Alta.

Winnifred E. MacSwain. We regret to learn that Miss MacSwain has been obliged, owing to the illness of her mother, to resign her position as instructor of domestic science in Braemar Ladies' College, Vancouver, B.C.

Laura J. Macfarlane and Hazel C. Gibbon are members of the staff at Macdonald College.

Jane A. Fraser, '12, is expected to return after Christmas to complete her second year in domestic science.

Marguerite B. Lawrence, '12, is in California visiting her sister, Mrs. Messenger, who was well known here as Miss Hortense Lawrence.

Muriel E. Burt, '12, is at her home in Halifax, N.S.

Alice L. Armitage, '08, nurse-in-training, Montreal General Hospital.

Elsie B. Dunsmore, '12, nurse-in-training, Albany, Vermont.

Marion E. Esterbrook, '12, is taking a course in domestic art at Rochester, New York.

Elsie A. Thorn, '12, who has been travelling in Europe during the past summer, has returned to her home in Ottawa.

Florence R. Mooney, '12, has resumed her studies in various branches of art at Stanstead College, which is the dear Alma Mater of many Macdonald students.

The engagement is announced of Miss Isabel Ewing, '11, to Mr. Bryson, of Ottawa. "Dora's brother."

The engagement is announced of Miss Grettà Freeze, '12, to Mr. Norris Oughtred, of Sask.

The engagement is announced of Miss Lena Alguire, '12, to Mr. Bert Mackay, Cornwall, Ont. Miss Alguire will be remembered as president of the Girls' Athletic Assn. and also a prominent basket ball player.

TEACHERS.

Miss Marion Scott, president of class '12, is teaching in Scotstown this year.

Miss Gladys Lefever, Elem. '12, is teaching in East Angus.

Miss Laura Woodley, Class '12, is teaching in Fairmount School, Montreal.

Miss Laura Young, Elem. '12, is teaching in Shigawaki Upper School, and Miss Jennie Hayes, also Elem. '12, in the Lower School.

Miss Muriel Doak, Class '10, is teaching in Aberdeen School, Montreal.

Miss Louisa French is to spend the winter in Berkeley, Cal.

Miss Gladys Neil, Class '10, is teaching in Strathcona School, Montreal.

Miss M. J. Cummings, Class '10, is teaching in the Primary Department, Arcola Public School, Arcola, Sask.

The engagement is announced of Miss Lily Chadwick, Class '12, to Mr. Harry Hinton, of Prince Edward Island. Both are College graduates.

Miss Ruby Blois, Class '09, is teaching in the Alexandria School, Montreal.

Miss Gladys Kempffer, Elem. '10, is teaching at River du Loup Station.

Miss Amy B. Smith, Class '09, is teaching in Fairmount School, Montreal.

The engagement is announced of Miss Frances Powers, Class '09, to Mr. Douglas Smith, Montreal.

Miss E. F. Bradford, Class '12, is Principal of the Model School at St. Andrews, Que.

Miss J. Standish has resumed her work in the Alexandria School.

Miss Patience Scott, Class '09, is spending the winter in Paris studying French.

The engagement is announced of Miss Beatrice Farquharson to Mr. Neff, of Sask.

Misses Muriel Travers, Pauline Partington, Elsie Gas, G. Shedrick, all members of Class '12, are teaching in Dufferin School, Montreal.

Miss Annie Macfarlane, Class '12, is teaching at Starks Corner, Que.

Miss F. Wilkinson is teaching in Quebec City, Que.

Miss Violet Scott is teaching in Lansdowne School, Montreal.

Miss Annie Rexford, Class '12, is Principal of the Model School at Shawinigan Falls and has Miss Amy Dresser as her assistant.

Miss Edith Moore, Class '08, is teaching in Fairmount School, Montreal.

Miss C. Cowling, Class '12, is teaching in Lachute Academy.

Miss Ada Bartlett, Elem. '12, is teaching at Port Daniel, Que.

Miss Dora Rothera, is teaching at East Angus.

Miss G. Hamilton, Class '12, is teaching in New Carlisle Academy.

Miss Muriel Ruiter, Elem. '12, is teaching at Freeport.

Miss Edna Wilson assists in the Lachine Academy.

Mr. J. R. Calder is teaching at Three Rivers in place of Mr. J. E. McQuat, who is now at Lachute.

CONSTITUTION OF THE

Macdonald College Agricultural Alumni Association.

(Adopted June 6th, 1912.)

ARTICLE I.—NAME.

This Organization shall be called the Macdonald College Agricultural Alumni Association.

ARTICLE II.—OBJECTS.

The objects of this Association shall be:

(a) To maintain interest in one's own classmates and College friends.

(b) To promote an active interest in all graduates of the Faculty of Agriculture and in the future welfare of the College.

(c) To provide organized means whereby graduates may be of service to one another and to their Alma Mater.

ARTICLE III.—MEMBERSHIP.

The membership of this association shall consist of all B.S.A. graduates of Macdonald College.

ARTICLE IV.—EXECUTIVE ORGANIZATION.

Clause 1. Each class shall appoint an Alumni Secretary.

Clause 2. The class secretaries shall appoint a general secretary, who shall reside at Ste. Annes, or in its vicinity.

Clause 3. The general secretary shall hold office for a term of five years, and may be eligible for re-election.

Upon his resignation he shall recommend his successor, the same to be appointed by the class secretaries.

ARTICLE V.—DUTIES OF THE EXECUTIVE.

Clause 1.—The duties of the class secretaries shall be to keep in touch with each and every member of the class; to keep an up-to-date list of addresses and vital statistics; to keep an outline of the career of each member; to keep the general secretary supplied with the foregoing information; and to co-operate with him in the arrangements for reunions.

Clause 2.—The duties of the general secretary shall be to keep in touch with the class secretaries; to prepare matter for publication; to arrange for reunions at specified times; to take charge of the funds of the association; to submit to the class secretaries once yearly an accurate account of all moneys received and disbursed; to furnish a list of the graduating class with their options to the class secretaries, at least three months before the end of each session; and to advise graduating classes in regard to alumni organization.

ARTICLE VI.—MEETINGS.

Re-unions shall be held at Macdonald College every fifth year, beginning with the year 1915.

ARTICLE VII.—OFFICIAL ORGAN AND MATTER FOR PUBLICATION.

Clause 1.—The Macdonald College Magazine shall be the official organ of the Association.

Clause 2.—A list of addresses shall be published at least once a year. Vital statistics, personal and other items of general interest, and contributions from Alumni shall be published from time to time at the discretion of the general secretary.

ARTICLE VIII.—MEMBERSHIP FEE.

Clause 1.—There shall be an annual membership fee of 75 cents or an annual fee of \$1.50, which shall include a year's subscription to the Magazine; or a life membership fee of \$15, \$10.00 of which shall be credited to the College Magazine.

Clause 2.—All monies obtained from life membership fees shall be reserved as a sinking fund in the name of the Macdonald College Agricultural Alumni Association. Current interest shall be paid over annually to the College Magazine. In case the Magazine ceases to be published within ten years, seventy-five per cent. of this \$10.00 shall be returned to the subscriber and twenty-five paid over to the Magazine Board.

Clause 3.—Fees shall be payable to the general secretary in September of each year.

ARTICLE IX.—CHANGES IN CONSTITUTION.

The general secretary or any class secretary may recommend a change in the Constitution. This change shall become valid after being submitted by the general secretary to the class secretaries, if three-fourths of the class

secretaries who reply within a reasonable time vote in favor of the proposed change.

June 10th, 1912.

Signed on behalf of Class '11.

(Signed) R. SUMMERBY.

Signed on behalf of Class '12.

(Signed) ROBERT NEWTON.

W. J. REID,

General Secretary.

TO WHOM IT MAY CONCERN:

The Editorial Board of the Macdonald College Magazine hereby agrees:

(a) To act as the official organ of the Macdonald College Agricultural Alumni Association.

(b) To publish the matter submitted by the General Secretary of the aforementioned Association, as outlined in its constitution.

(c) To give to graduates of the School of Agriculture subscription rates of one dollar per year, or ten dollars for a life subscription.

(d) To accept current interest annually on \$10.00 per life subscription, and in case the Magazine ceases to be published within ten years, seventy-five per cent. of this \$10.00 shall be returned to the subscriber and twenty-five per cent. paid over to the Magazine Board.

(e) To give six months' notice to the General Secretary of the Alumni Association before breaking this agreement.

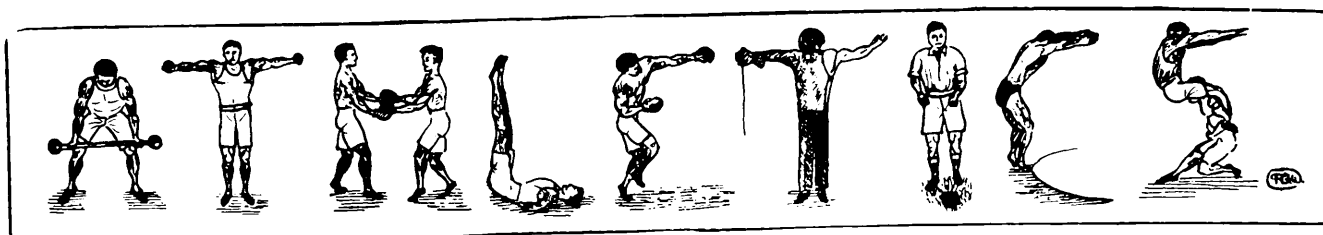
Signed June tenth, nineteen hundred and twelve.

(Signed) J. SYDNEY DASH,

Editor-in-Chief.

(Signed) A. C. GORHAM,

Business Manager.



ANOTHER year has rolled by and we find ourselves back at Macdonald with a large number of old students enrolled, together with a few new ones in the upper classes and a bumper class of Freshmen. Judging from the size of the class and from the form which they are showing in their athletic training, we venture to say that their presence will be brought forcibly to our notice in the near future.

The Macdonald College Athletic Association drops out of existence during the Summer months, except for the few students who remain over to work on the different departments during their vacation. This past summer a number of the students formed a "Summer Tennis Club." They had two courts on the girls' campus where many a pleasant hour was spent at the game.

The first attempt at organized sport for this term was in the form of a baseball match, in which the Freshmen challenged the rest of the College. The game was played on the afternoon of Saturday, October 5th, on the boys' campus. Harry Evans pitched for the College and Hyndeman for the Freshmen. The game, taken as a whole, was a good exhibition of baseball, ending up with a score of 8 to 13 in favor of the College team.

On the evening of Thursday, October 7th, the M. C. A. A. held its first general meeting, which was for the purpose of electing officers for positions on the committee, made vacant by the absence of some of last year's men. J. K. King,

'13, was elected President, G. W. Muir, '14, vice-president, and H. J. Fiske, '14, Secretary. Friday, October 18th, was selected as Field Day and we are hoping that the weatherman will smile kindly on us, so that all may enjoy the events and, incidentally, that a few records be broken. Instead of having the Inter-year Tug-of-War, as on former occasions, it was decided to have a new event, namely, the Hop, Step and Jump—the former being considered by all who have ever taken part as too strenuous for all the honor obtained.

At the beginning of each Session there has always been considerable discussion as to the relative merit of Soccer and Rugby as football games at the College, and this year was no exception. As always before, Soccer was chosen; the reasons put forth in its favor being that it took fewer men, the team was easier to train considering the time at our disposal and the expenses of a Soccer team were much less. Dr. Lynde was elected manager of the Soccer team and D. E. Lothian '13, captain. The team played its first match on Saturday, October 12th. The "Farm" team was the challenging one, and the game resulted in a score of 4—0 in their favor. It had been raining in the early part of the afternoon, which tended to hamper the play, and this, together with the fact that it was the first regular team play that our men had had accounted for the poor showing. The new players showed that they were made of good stuff, and after a few practices we hope to see them meet the

same team again and give a better account of themselves.

As usual our Association sent in a number of men to compete in the McGill Inter-year Sports, which were held this year on Friday, October 11th. Those who went in and took part were: King, '13; Muir, '14; Walker, '15; Evans, '15; White, '15; Smith, '16 and Jacks, '16. King won third in 220 yards run; Walker third in the 120 yards high hurdles; White third in the

half mile run and Muir second in the mile run.

Long before these notes have appeared before the readers of the magazine our own Field Day will be over and we will have started our series of Inter-class games. Full details of all these happenings will appear in our next issue. In the meantime we wish the competitors on Field Day every success.

G. W. M., '14



EXECUTIVE COMMITTEE M. C. A. A.

Left to Right—Front Row—Ford, Muir, King (President), Fisk, Walker. Back Row—Ritchie, Cooke, Wilcox, Jacks, Smith, Sutton, Emberley.

Girls' Athletics.



THE Macdonald College session 1912-13 has now commenced and the many different sports in which the girls participate will, we hope, form a very important part of the college year. In former years the girls have shown great enthusiasm and many good matches were played, and we look forward and hope this year may prove even more successful than years past.

As yet no athletic clubs have been organized, beyond the tennis club, and no matches have been played beyond a few practice games of basket-ball in the gymnasium. Great interest was taken in these, but many of the girls were unable to play on account of not knowing the game; some though, have learnt during the short time in which they have been here—due to the kindness of the old girls who helped them considerably.

Base-ball is less universally known among the girls and no matches whatever have been played, though attempts have been made to hit the ball.

Since the swimming tank has been open, girls have been in swimming nearly every day. On "deep days" (as they are called when the water is deep) the girls dive, swim under water, float and do various other water "stunts."

A meeting of all the girls was held early in September to see which girls wanted to play the different games. The majority were in favor of playing basket ball. It was also announced that no inter-college matches would be played this year, but, instead, the different sections and classes would play against each other.

We wish to thank the boys for the use of their tennis courts during September. Every fine afternoon girls have enjoyed exciting games of tennis there.

We hope soon to organize the different athletic clubs, and hope the girls will do their utmost to make this the most successful athletic year Macdonald has ever had.

B. G. R.

That time of year thou mayst in me behold,
 When yellow leaves, or none, or few do hang
 Upon the boughs that shake against the cold,—
 Bare, ruined choirs where late the sweet birds sang.

—*Shakspeare.*



COLLEGE COLORS.

Speaking of college colors, Black and Blue would be highly appropriate at a football game.—Ex.

* * *

Raymond (judging field crops)—“Is your husband at home, Mrs. B.?”

Mrs. B.—“No, he is not. What do you want him for anyway?”

Raymond—“I was just wanting to judge his potatoes.”

Mrs. B.—“Just wait a minute till I call him. He’s in the garden.”

* * *

Campbell (doing district representative work)—“Do you practise a systematic rotation of crops?”

Farmer—“Yes, I do not believe in growing more than one crop on the same piece of land each year.”

* * *

Sim—“This sailor must have been quite an acrobat.”

Mother—“Why, dear?”

Sim—“Because the book says, ‘Having lit his pipe, he sat down on his chest.’”

* * *

Miss P——e—“I hope I shall see him again before I go; I want to have a last word with him.”

Naturally, women always want the last word.

AT THE Y.M.C.A. RECEPTION.

Fortuneteller—“You shall meet with a terrible accident which will prove fatal.”

Miss P. (in great alarm)—“Gracious, how you do terrify me!”

Fortuneteller—“Don’t be alarmed. That will only happen at the end of your life.”

* * *

Mr. E. (to a freshman and thinking to have some fun)—“I say, old man, can you give the meaning of the word nothing?”

Freshman—“I’m sure that I don’t know the meaning of that word, but I might say, however, that it would seem to occupy the place where your brains ought to be.”

* * *

First Soph.—“Why are the freshmen like the leaves in spring?”

Second Soph.—“Because they come in each year as green and fresh as ever.”

* * *

Miss M—z—s to A—x N—s (writing signature in name contest)—“You are not supposed to read them afterwards, are you?”

* * *

Missionary—“Why do you look at me so intently, my brother?”

Cannibal—“I am the food inspector.”
—Ex.

Miss B. (in Science, to dairyman, on being shown the cows)—“Which one of the cows gives buttermilk?”

Miss W. (much astonished)—“Why, my dear, do not show your ignorance in that way. Do you not know that it is the goats that give the buttermilk?”

* * *



A SCIENTIFIC LOAF.

Household Science Student:—“After disinfecting my hands, analyzing the flour, deodorizing the egg, inoculating the yeast, and sterilizing the pans and cans, my bread is *like lead*.”

* * *

Little Arthur had just been given a piece of bread and butter by his mother and, very politely, he said, “Thank you.”

His mother said, “I like to hear my little boy say ‘Thank you.’”

“Well,” rejoined little Arthur, “if you wish to hear me say it again, you may put some jam on it.”

* * *

HER LOOKS

Little dabs of powder
Little specks of paint
Make my lady's freckles
Look as if they ain't.

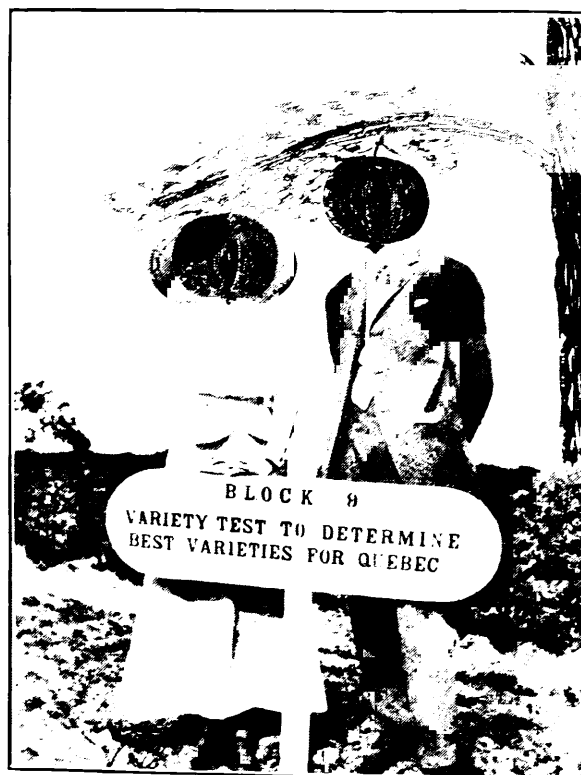
—Ex.

THE RESOLUTION OF THE FRESHETTES.

We soon knew
And we respected
(We were freshies)
Them, of whom
There are twenty.
They have wisdom
And knowledge plenty!

Who are they?
Everyone knows
What we all call them.
Though dignified girls
They're all full of fun;
We all regard them
As sports—everyone!
They did initiate,
Oh! it was solemn!

They have authority.
We dare not think
Of doubting their word,
But it's our duty
To honor, obey
The girls of Macdonald
Who've won all the sway.
Who are they?
The Seniors!



Name the Varieties.

At one of the county exhibitions this fall a farmer and his wife were watching an aeroplane as it glided in graceful curves in the air far above their heads. In his intense interest in the manoeuvres of the airman, the farmer wandered out into the road of an approaching automobile. Fortunately for him, his wife warned him in time, so that he stepped back into the crowd, but it was not long before his attention was again so firmly riveted upon the doings of the sky pilot that he forgot all earthly perils till he was knocked down by a motor cycle. His wife, as she helped him to get up, gave him a "calling down" and told him that it was his own fault, as she had warned him to be more careful. His only excuse was: "How in blazes was I to know that the darned thing had a colt?"

Miss Tyrell (sitting at the table where the sun shone in her face)—"Don't think I'm winking at you, Mr. Raymond."

Mr. R. (in a sarcastic voice)—"Oh, no, I didn't think you capable of such a thing."

* * *

Johnny—"Does it cost much to feed the giraffes?"

Keeper—"No; you see, a little goes a long way with them."—Ex.

* * *

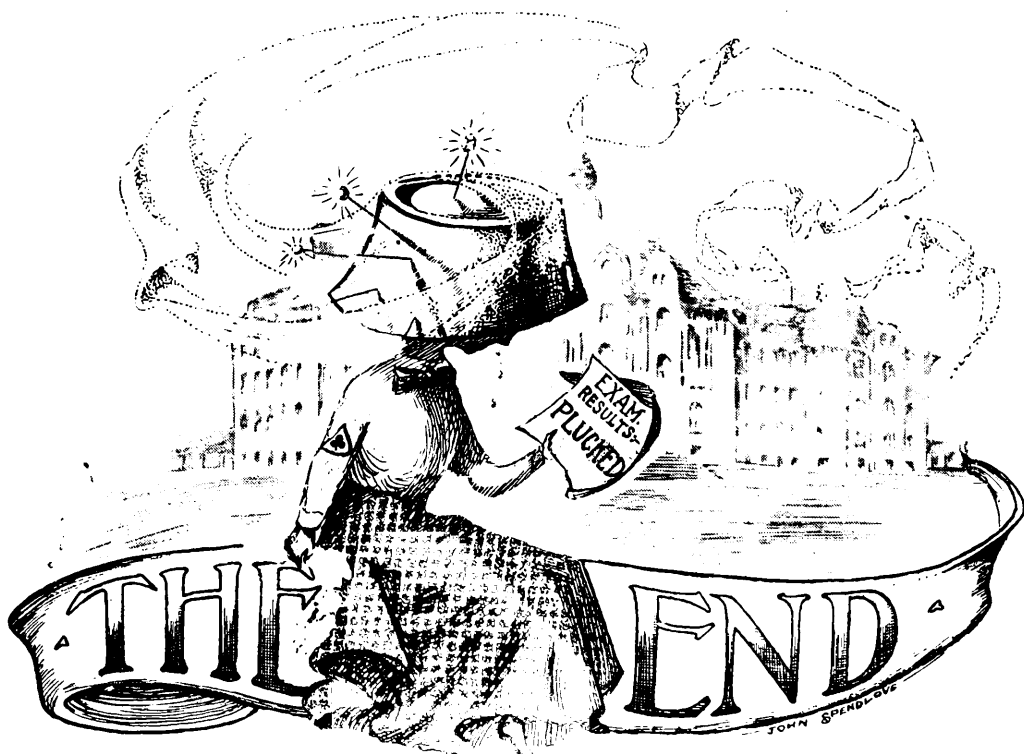
Young bride (who has taken a course in Household Science)—"I am very sorry, but I have to complain about the flour that you sent me the other day."

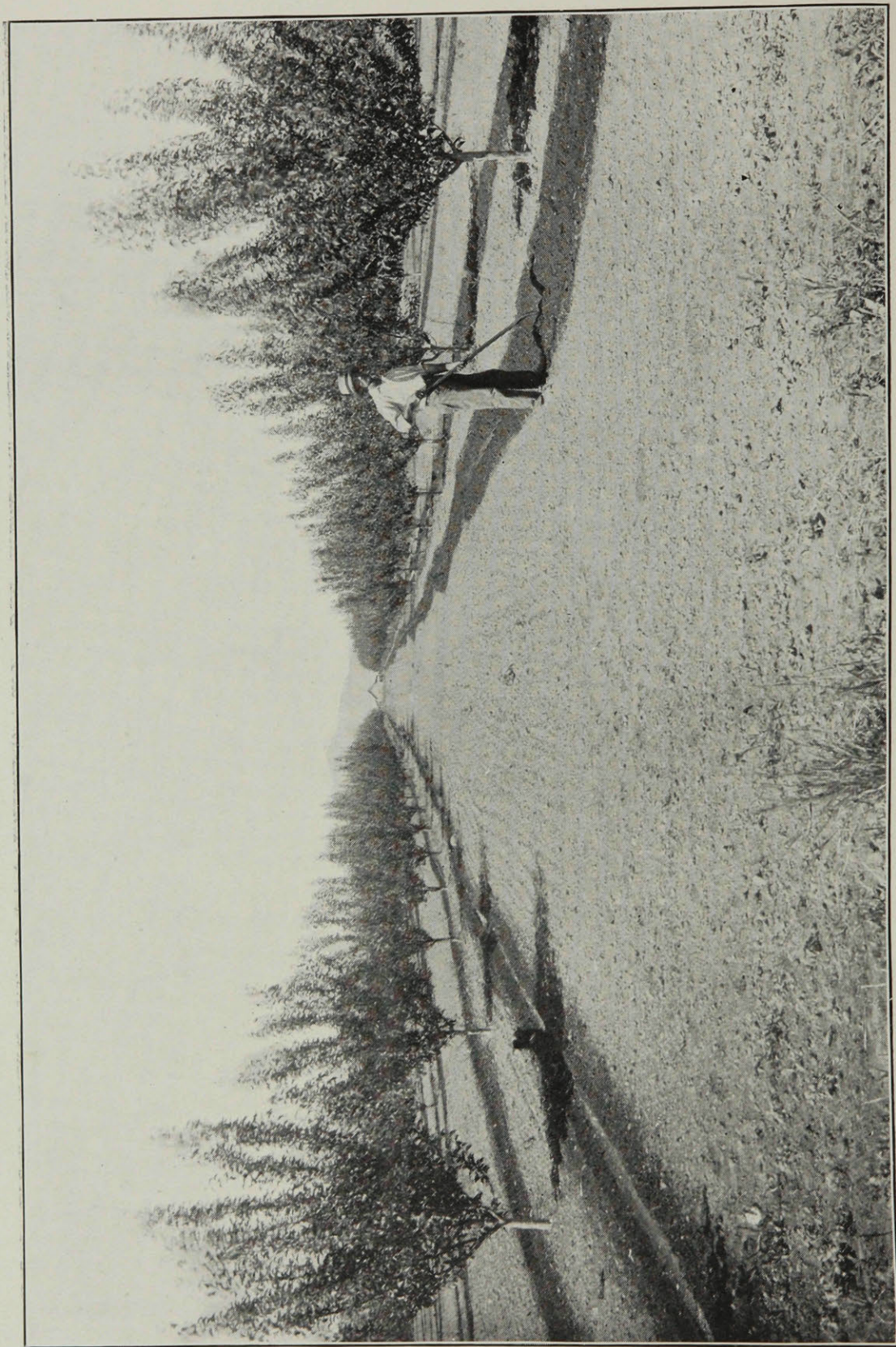
Grocer—"What was the matter with it?"

Young bride—"It was too tough."

Grocer—"Too tough?"

Young bride—"I made some pie crust with it and my husband couldn't cut it with a knife."





Orchard Irrigation in British Columbia.